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**TRACING THE ORIGINS OF EUCHARISTIC MAGIC:
ON THE ROLE OF COGNITIVE ATTRACTION
IN THE CULTURAL TRANSMISSION
OF COLLECTIVE RITUALS**

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OPENING REMARK

The work on this thesis has been regulated by an agreement on a jointly supervised dissertation between the University of Helsinki and the Masaryk University. This thesis has been handed in at the University of Helsinki and the Masaryk University in accordance with the applicable rules of the universities.

AUTHORSHIP DECLARATION

This thesis is composed of my original work and contains no material previously published or written by another person.

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Vojtěch Kaše

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ABSTRACT IN ENGLISH

In this thesis, I analyze the process of the gradual ritualization of early Christian meals in the first four centuries CE as accompanied by the increasing popularity of beliefs in the supernatural quality of the meal elements. I advocate a general hypothesis that the long-term cultural dynamics of repetitive collective rituals is to a substantial extent driven by how they attract human cognition, an aspect which is at least as important for cultural success of concrete ritual forms as how these ritual forms are designed in respect to fulfill particular social functions.

After offering a short sketch of relevant cognitive theories of ritual (Chapter 1) and introducing the perspective of cognitive historiography (Chapter 2), I turn to the historical evidence. Tracing back in time the emergence of beliefs in the supernatural quality of the meal elements in the sources from the fourth and third century, it becomes evident that these beliefs cannot be explained by a reference to changes associated with the “Turn of Constantine” (Chapter 3). Therefore, in Chapter 4, I turn to the process of gradual ritualization of early Christian meal practices over the first two centuries. To emphasize the specificity of my approach in comparison to other trends in contemporary New Testament scholarship, in Chapter 5 I elaborate my approach in detail in respect to the Lord’s Supper tradition in Paul. In Chapter 6, I move back on a more theoretical level, while introducing a computational model of the cultural transmission of rituals, which is partly based on the historical process under scrutiny.

Keywords: Early Christianity; Early Christian Meal Practices; Eucharist; Eucharistic Magic; Cognitive Historiography; Cognitive Ritual Theory; Cultural Transmission of Rituals; Ritual Efficacy; Theory of Magic; Social Simulations

ABSTRACT IN FINNISH

Väitöskirjassani analysoin varhaisten kristillisten aterioiden vähittäistä ritualisaatiota neljällä ensimmäisellä vuosisadalla. Tarkastelen myös sitä, miten tähän ritualisaatioon liittyi läheisesti ateria-aineisiin kohdistuvien yliluonnollisten uskomusten lisääntyminen. Väitän, että rituaalien kognitiivinen attraktiivisuus vaikuttaa merkittävästi usein toistettujen kollektiivisten rituaalien pitkän aikavälin dynamiikkaan. Attraktiivisuus on rituaalien menestyksen kannalta vähintään yhtä merkittävä tekijä kuin se, että niillä on yhteisössä tiettyjä sosiaalisia funktioita.

Luvussa 1 esittelen tutkimukselle merkittävät kognitiiviset rituaaliteoriat ja luvussa 2 käsittelen kognitiivista historian tutkimusta. Tämän jälkeen analysoin historiallisia lähteitä. Luvun 3 analyysi kolmannen ja neljännen vuosisadan teksteistä osoittaa, ettei ateria-aineisiin

kohdistuvia ylikuonnollisia uskomuksia voi selittää ”konstantinolaiseen käänteeseen” liittyvillä muutoksilla. Tämän tulos johtaa luvussa 4 tarkastelemaan varhaisten kristillisten ateriakäytäntöjen vähittäistä ritualisaatiota kahden ensimmäisen vuosisadan aikana. Luvussa 5 syvennän lähestymistapaani ja analysoin yksityiskohtaisesti traditiota Herran aterista Paavalin teksteissä. Samalla avaan näkökulmani erityispiirteitä suhteessa muihin tämänhetkisiin virtauksiin Uuden testamentin tutkimuksessa. Luvussa 6 palaan teoreettisemmalle tasolle ja esittelen tietokonemallin, jonka avulla voi kuvata rituaalien kulttuurista välittymistä. Perustan mallini osittain tässä työssä tarkastelemaani historialliseen prosessiin.

ABSTRACT IN CZECH

V této dizertační práci analyzuji proces postupné ritualizace raně křesťanského stolování v prvních čtyřech stoletích n.l., který nahlížím v provázanosti s narůstající popularitou věr v nadpřirozenou kvalitu konzumovaného jídla. Obhajuji zde obecnou hypotézu, podle níž je dlouhodobá dynamika kolektivních rituálů do značné míry ovlivňována tím, jak jsou konkrétní rituální formy atraktivní pro lidskou kognici, a že tento aspekt může mít ještě důležitější dopad na úspěšnost konkrétních rituálních forem než to, jak je daný rituál vhodný k plnění různých sociálních funkcí.

Poté co stručně představím relevantní kognitivní teorie rituálu (kapitola 1) a předsťru zvolenou perspektivu kognitivní historiografie (kapitola 2) se obrátím k historickým pramenům. Stopováním věr v nadpřirozenou kvalitu konzumovaného jídla v pramenech ze čtvrtého a třetího století se ukáže jasným, že tyto víry nemohou být vysvětleny s odvoláním na změny spojené s takzvaným „Konstantinovským obratem“ (kapitola 3). Proto se v kapitole 4 obrátím k procesu postupné ritualizace raně křesťanského stolování v prvních dvou stoletích. Abych zdůraznil specifika svého přístupu v kontrastu k praxi běžné v soudobém novozákonním bádání, rozvinu jej v 5. kapitole detailně s využitím tradice tzv. „Večeře Páně“ u Pavla z Tarzu. V 6. kapitole se vracím zpět na teoretickou rovinu, a to když představuji výpočetní model kulturního přenosu rituálu, který je postaven právě s odkazem na předložené historické analýzy.

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LIST OF ABBREVIATIONS

Books series, editions and translations

ANF = *Ante Nicene Fathers*. Ed. P. Schaff [online ebooks . Retrieved from <http://www.ccel.org/fathers.html>

CSEL = *Corpus scriptorum ecclesiasticorum Latinorum*

ESV = *English Standard Version translation of the Bible*

MPG = *Patrologia Graeca*. Ed. J.-P. Migne.

MPL = *Patrologia Latina*. Ed. J.-P. Migne.

NA28 = *Greek New Testament*. Ed. E. Nestle & K. Aland (28th edition)

NPNF = *Nicene and Post-Nicene Fathers*. Ed. P Schaff et al. [online ebooks . Retrieved from <http://www.ccel.org/fathers.html>

SC = *Sources chrétiennes*

TLG = *Thesaurus Linguae Graecae* [online resource . Retrieved from <http://stephanus.tlg.uci.edu/>

Individual authors and works

Ambr. *De excessu fratris* = Ambrosius Mediolanensis (= Ambrose of Milan), *De excessu fratris*

Ambr. *De sacr.* = Ambrosius Mediolanensis (= Ambrose of Milan), *De sacramentis libri sex*

Aug. *Iulian; opus imperfectum* = Augustinus Hipponensis (= Augustine of Hippo), *Contra Iulianum opus imperfectum*

Aug. *Joannis tract.* = Augustinus Hipponensis (= Augustine of Hippo), *In Joannis Evangelium tractatus cxxiv* (= Tractate on the Gospel of John)

Aug. *Ser.* = Augustinus Hipponensis (= Augustine of Hippo), *Sermones*

Bas. *Ep.* = Basilius Caesariensis Cappadociae (= Basil of Caesarea), *Epistulae*

Can. Lao. = Canons of the Council of Laodicea

Const. ap. = *Constitutio apostolica* (= Apostolic Constitutions)

Cypr. *De laps.* = Cyprianus (= Cyprian), *De lapsis*

Cypr. *Ep.* = Cyprianus (= Cyprian), *Epistulae*

Cyr. H. *Catech.* = Cyrillus Hierosolymitanus (= Cyril of Jerusalem), *Catecheses mystagogicae*

De virg. = *De virginitate*

Did. = *Didache* (= Teaching of the Twelve Apostles)

Diod. Sic. *Bib. hist.* = Diodorus Siculus (= Diodorus of Sicily), *Bibliotheca historica*

Eus. *Hist. eccl.* = Eusebius Caesariensis (= Eusebius of Caesarea), *Historia ecclesiastica* (= The Church History)

Gr. Nyss. *Or. catech.* = Gregorius Nyssenus (= Gregory of Nyssa), *Oratio catechetica magna* (= The Great Catechism)

Hier. *Comm. in Matt.* = Hieronymus (= Jerome), *Commentaria in Evangelium S. Matthaei*

Ign. *Eph.* = Ignatius Antiochenus (= Ignatius of Antioch), *Epistula ad Ephesios*

Ign. *Phil.* = Ignatius Antiochenus (= Ignatius of Antioch), *Epistula ad Philadelphios*

Ign. *Smyr.* = Ignatius Antiochenus (= Ignatius of Antioch), *Epistola ad Smyrnaeos*

Ign. *Magn.* = Ignatius Antiochenus (= Ignatius of Antioch), *Epistola ad Philadelphios*

Joann. Chr. *Hom. in prod. Jud.* 1 = Joannes Chrysostomos (= John Chrysostom), *Homilia in prodicionem Judae I* (= First Homily on the Treachery of Judas)

Just. *1 Apol.* = Justinus Martyr (= Justin Martyr), *Apologia prima pro Christianis ad ad Antoninum Pium*

Just. *Dial.* = Justinus Martyr (= Justin Martyr), *Dialogus cum Tryphone Judaeo*

Lib. pont. = *Liber pontificalis*

Nov. (Ps.-Cyp.), *De spec.* = Novatianus (Pseudo-Cyprianus), *De spectaculis*

Plin. *Ep.* = Plinius Secundus (= Pliny the Younger), *Epistulae*

Porph. *Christ. frag.* = Porphyrios, *Adversus Christianos, fragmenta*

Serap. *Euch.* = Serapion Thmuitanus (= Serapion of Thmuis), *Euchologium* (= The Prayers)

Tert. *Ad uxor..* = Tertullianus (= Tertullian), *Ad uxorem*

Tert. *Adv. Marc* = Tertullianus (= Tertullian), *Adversus Marcionem*

Tert. *Apol.* = Tertullianus (= Tertullian), *Apologeticum*

Tert., *De cor.* = Tertullianus (= Tertullian), *De corona*

Tert. *De or.* = Tertullianus (= Tertullian), *De oration* (= On Prayer)

Trad. ap. = *Traditio apostolica* (= Apostolic Tradition)

LIST OF FIGURES

Figure 1.1: Cognitive model of ritual

Figure 2.1: Research logic of this thesis

Figure 5.1: Conceptual blending in 1 Cor. 10:16 and 10:17

Figure 6.1: Simulation environment

Figure 6.2: Agent's memory

INTRODUCTION

The Dual Interest

This study evaluates the role of human intuitions associated with ritualization, ritual efficacy and magic in the cultural transmission of collective rituals. It does so while analyzing historical data concerning early Christian meals and beliefs associated with these meals. Considering the attention it pays to such general topics as ritual theory, magic and cultural transmission, the study attempts to contribute to theoretical discussions concerning these subjects at least to the same extent as to the study of early Christianity.

Concerning early Christianity, I sketch here an alternative account of the history of early Christian ritual meals. I take into consideration different causal factors than the ones which are commonly discussed in recent scholarship: instead of focusing on the social functions of those meals and their place in the broader Greco-Roman cultural setting, I examine the interplay between the increasing ritualization of those meals and emerging beliefs in the supernatural quality of the meals' elements (see especially Chapters 3–5).

Following this dual interest in theory and history, I seek to target two group of readers. First, I hope that my focus on ritual theory, ritual efficacy, magic and the cultural transmission of rituals in respect to human cognition will on the one hand attract readers with interests in general features of human thought and behavior, especially from the field of cognitive science of religion and cultural evolution. I will try to demonstrate to these readers that the history of ancient religions offers a unique window into long-term cultural processes, having a potential to contribute substantially to scientific theorization about the relationship between religion, cognition and human cultural evolution. On the other hand, I am writing for readers with an interest in early Christian history, especially New Testament scholars and historians of Christian liturgy. Although I rely extensively on recent research in these fields, however, my own approach is based on different research assumptions than the ones which are common in these fields and I ask different types of questions than those which are typical. First of all, rather than asking how cognitive science and other disciplines studying general aspects of human thought and behavior can contribute to the study of early Christianity, I instead explore how the study of early Christianity can contribute to these disciplines.

For the work to be accessible for these two groups of readers at the same time, I had to choose a compromising style of writing. Readers with a scientific background might find strange the way I introduce numerous experimental studies one by one, including descriptions

of their design, instead of simply listing the main empirical findings of these studies, which is a common practice in that field. Although the practice that is common in the sciences is definitely more effective than the one that is common in the humanities (considering the limited extent of scientific articles), it is often not as persuasive to a historian, who is typically used to discussing the work of other scholars in much more depth than summarizing and reducing their findings into one sentence or so (classically about whether a hypothesis was supported or not). Furthermore, by describing the experimental designs of the discussed studies, I want to make clear, particularly to those who are not used to reading such work, what kinds of methods drive the field of the cognitive science of religion and related disciplines, in order to emphasize why these methods are insufficient, especially when it comes to the issues of long-term cultural processes. On the other hand, in respect to the historical material, I pay only limited attention to cultural contextualization of the discussed historical sources. I hope that this practice is acceptable, as my ambition is to uncover global trends in the historical processes which may be associated with my general hypothesis rather than offering a detailed, contextually sensitive interpretation of early Christian reality.

Basic Terms

It is important to emphasize that when talking about rituals or—more precisely—frequently repeated collective rituals, I do not refer to a sharply demarcated category which is subject to an Aristotelian definition (Snoek, 2006). In my usage, the term instead denotes any behavior, either religious or secular, revealing such features of ritualization as rigidity, goal-demotion, compulsion and internal-repetition. Such behavior is sometimes accompanied by supernatural beliefs concerning its intended outcome, the so-called ritual efficacy. Thus, there is a continuum with ordinary behavior on one side of the scale and highly ritualized religious practices on the other.

The phenomenon of ritual efficacy overlaps with what is studied under the terms of magic and superstition. Therefore, already the title of this thesis involves the term “magic.” But speaking about magic in the context of early Christianity is not meant to be anyhow pejorative, as the framework adopted here assumes that the phenomenon of magic is anchored in important psychological heuristics with an evolutionary adaptive value. As I will demonstrate later in this thesis, immersion in these heuristics produces beneficial psychological outcomes for our well-being as members of the human species (both those from the ancient Mediterranean and modern Westerners), giving us a sense of control in stressful situations, improving our psychosomatic state, and thus even boosting our performance in difficult tasks (for references, see Chapter 1).

Thus, this study attempts primarily to advance our understanding of important features of human thought and behavior in general and not to single out one religious tradition for having its history tightly connected with magic or superstition.

Rituals are rarely invented from scratch. Much more commonly, they emerge by means of gradual modifications of ordinary activities over repeated instances, conducted either by an individual or by a group. At some point, a modified version of an activity, with a certain extent of ritualization, may become a stable ritual form that then enters the chain of cultural transmission. The question is, what are the decisive factors for the stability, longevity and spread of this form, either among individuals or from one group to another across a population? Here we should consider how much a ritual form grabs attention, consumes energy, is memorable etc., as well as what it offers, both pragmatically and in supernatural terms. In what follows, I will focus on how the process of cultural transmission can be understood in the case of frequently repeated collective rituals, for which the study of the development of early Christian meals offers an important example.

Hypothesis and Overview of the Thesis

With this said, I can formulate my general hypothesis. It claims that *(1) the long-term cultural transmission of repetitive collective rituals (their overall dynamics) is to a substantial extent driven by innate ritual and magical intuitions activated in those who participate in the rituals, and that, under certain conditions, (2) these forces might be even of greater importance for the cultural success of concrete ritual forms than how these rituals are designed in respect to fulfilling particular social functions.* By ritual and magical intuitions, I mean various cognitive mechanisms which are activated when someone is observing or participating in a ritual, evaluating its efficacy, and often being subjected to what has been called “magical thinking.” I discuss the mechanisms in a unified framework in Chapter 1 (“Ritual, Ritual Efficacy and Magic: An Integrative Model”). Activation of these mechanisms in those who participate in a ritual reflects what might be described as the overall *cognitive attraction* of the ritual. The ritual with greater cognitive attraction should be also more successful in cultural transmission.

This thesis can be classified as falling under the category of cognitive historiography. As I will demonstrate in Chapter 2 (“Cognitive Historiography as a Cognitive Science of Cultural Dynamics”), the field of cognitive historiography goes much further than simply applying the findings of cognitive science to the study of history. The emergence of cognitive historiography could also be viewed as an entrance of another discipline into the broad research

area of cognitive sciences. Because of the common historical interest in processes covering significant time periods and concerning millions of people, historians enjoy unique access to the processes of long-term cultural transmission. Thus, the discussion of issues associated with cultural transmission might represent a special contribution of cognitive historiography to cognitive sciences. As the ancient Mediterranean was an environment that enabled a great deal of freedom in cultural transmission processes, it might serve us as a kind of laboratory of cultural transmission (Kaše, 2016b). From that perspective, this thesis represents a specific type of hypothesis-driven research, which uses the historical data from this laboratory for evaluating theories from the cognitive science of religion. However, as the data used here are not quantitative, I cannot say that these theories are tested in a strict sense of the term.

In Chapter 3 (“A Reverse History of Eucharistic Magic: Explaining Eucharistic Development in the Third and Fourth Centuries”), I turn attention to the end-state of the historical process of my interest: The widespread beliefs and practices revealing aspects of what might be described as eucharistic magic. As I document these beliefs and practices in sources from both the third and fourth centuries, it becomes evident that they cannot be explained as resulting from the changes associated with the turn of Constantine, as is often claimed in the scholarship. Instead, I argue that they can be explained as naturally arising from ritual innovations which were implemented during the preceding period (i.e., especially in the second century and in the early third century) and further energized by the crisis of the third century.

In Chapter 4 (“Ritualization of Early Christian Meals over the First Two Centuries”), I offer an overview of the earliest Christian innovations regarding ritual meals. I introduce several passages from the New Testament in an attempt to uncover the possible ritual meal practices of communities from which these texts come out. Furthermore, I mark the most important ritual innovations promoted in texts like the *Didache* and in authors like Ignatius of Antioch and Justin Martyr.

Chapter 5 (“The Lord’s Supper Tradition in Paul: A Cognitive Reconsideration of Pauline Ritual Language”) delves deeper into the study of the earliest Christian meals by using cognitive insights for an interpretation of the “Lord’s Supper” tradition in Paul’s 1 Corinthians. Reviewing the research history of the most important verses from 1 Corinthians 10 and 11, I identify some problematic assumptions on which even the most recent scholarship relies. To counterbalance these, I analyze in detail some aspects of Paul language and its reception, adopting especially the tools from cognitive semiotics.

The concluding Chapter 6 (“Modeling the Cultural Transmission of Rituals: An Agent-Based Model Contrasting Social Function and Cognitive Attraction”) moves us back to a more

theoretical level. Drawing on the historical material discussed in previous chapters, here I design an agent-based model focusing on the cultural transmission of rituals. Analyzing the model, I can conclude that my main hypothesis is both historically and theoretically reliable, which, I infer, has some implications for the current discussion on the cultural evolution of religion. In the conclusion, I summarize the main findings of this thesis and suggest possible directions of future research dealing with the topic. Despite the fact that most of the chapters included here have been formerly written as autonomous studies, I hope that taken here together and extensively revised they now form a coherent whole developing one argument in a meaningful way.

CHAPTER 1: RITUAL, RITUAL EFFICACY AND MAGIC: AN INTEGRATIVE MODEL

Introduction

The goal of this chapter is to introduce a theoretical framework for the study of ritual, which I could then draw on later in the thesis. In the opening part of this chapter, I will discuss the ritual stance hypothesis introduced by Cristine Legare and her collaborators, which has been extensively explored experimentally over the last couple of years. While highly appealing from a cultural evolutionary standpoint (ascribing a crucial role to rituals by associating them with human cultural learning proclivities), I find problematic some of the assumptions on which the theory is based, and therefore deserving a detailed discussion.

Furthermore, I turn my attention to the model of ritualized behavior proposed by Pascal Boyer and Pierre Liénard, which can be fruitfully integrated with other research of interest. Then, I briefly summarize recent research on ritual efficacy. In that context, I especially focus on what I call object-transforming rituals (i.e., rituals that produce objects to which might be ascribed a special, or even supernatural, quality). I also compare the kind of beliefs concerning such material objects with beliefs described in terms of magic, superstition or fetishism. Finally, I offer an overview and summarization of the theoretical approach to ritual that I adopt in this thesis.

Ritual Stance Hypothesis

In a series of experimental studies and theoretical articles, Cristine Legare and her colleagues introduced a ritual stance hypothesis, which offers new insights into both evolution and the ontogeny of ritual by associating it with human cultural learning proclivities. First, as outlined in a short commentary article in 2013 (Legare & Herrmann, 2013, p. 65), this approach assumes that humans since early childhood have at their disposal two ideal types of learning strategies: instrumental learning and conventional learning. The instrumental learning strategy (i.e., the instrumental stance) is adopted for acquiring a goal-directed skill, while the conventional learning strategy is adopted in the context of the transmission of norms, including the transmission of rituals. For this reason, it has been called the ritual stance. Because these stances are ideal types only, we should not overlook the fact that “in practice, all behavior is

embedded within social contexts and frequently has both instrumental and conventional elements” (Legare & Nielsen, 2015, p. 688).

The empirical research on the ritual stance hypothesis has been conducted by following experimental research on the phenomenon known as overimitation. In these experiments, there is typically an adult model who demonstrates to a child how to retrieve a reward, most commonly a toy, placed inside a puzzle box. However, the demonstration involves some steps which are causally irrelevant for retrieving the reward (e.g., tapping the side of the box with a feather, jingling the bell, pressing a small piece of Silly Putty onto the box top) (see, e.g., Lyons, Young, & Keil, 2007). Young children reveal a very high proclivity to imitate these causally irrelevant steps and, what is remarkable, continue to do so even when they are informed that these steps are not necessary to receive the reward. The question is, what makes the case? There are two competing explanations of the phenomenon (for a recent sketch of the following typology, see Vivanti, Hocking, Fanning, & Dissanayake, 2017).

According to the *social-cognitive account*, overimitation reflects an overattribution of causal relevance, and it might be driven by a genuine belief that all of the demonstrator’s actions are somewhat relevant to accomplish the task. It might have evolved as an evolutionary advantageous strategy for fast and efficient transmission of object manipulation competences (Lyons, 2008; Lyons, Damrosch, Lin, Macris, & Keil, 2011; Lyons et al., 2007). However, this view has been criticized by advocates of various versions of the *social-motivational account*, who argue that overimitation is driven instead by children’s norm acquisition capacities or by their ambition to demonstrate affiliation with the model (Kenward, 2012; Kenward, Karlsson, & Persson, 2011; Keupp, Bancken, Schillmöller, Rakoczy, & Behne, 2016; Keupp, Behne, & Rakoczy, 2013; Keupp, Behne, Zachow, Kasbohm, & Rakoczy, 2015; Over & Carpenter, 2012; Whiten, McGuigan, Marshall-Pescini, & Hopper, 2009).

Following the social-motivational account of overimitation, Legare and her colleagues argue that children start to overimitate in a response of cues, indicating that what is going on is conventional rather than instrumental behavior. Thus, children imitate to a much greater extent when they are informed that “everyone always does it this way” (Clegg & Legare, 2016) or when they observe that the directedness toward the goal of the action is somehow intentionally disturbed (Legare, Wen, Herrmann, & Whitehouse, 2015). As Legare and her collaborators identify shared features between these cues and the common features characterizing ritualized behavior—namely, causal opacity and goal-demotion—she further argues that children overimitate because they adopt what might be called a ritual stance: an evolutionary evolved social learning capacity enabling the highly efficient transmission of social conventions.

In a formulation which can be found in slightly different versions across a number of both theoretical and empirical articles, Clegg and Legare define ritual as “socially stipulated, causally opaque, conventional behavior,” and they propose that “ritual is a socially motivated subset of conventional behavior with affiliative functions” (Clegg & Legare, 2016, p. 527; see Legare & Nielsen, 2015, p. 690; Legare & Watson-Jones, 2015, p. 830). While the first part of this formulation echoes the research on ritualized behavior, which is anchored in ethology and neuropathology (Boyer & Liénard, 2006; Liénard & Boyer, 2006), the second part of it, ascribing rituals an affiliative function, may be associated with a completely different research tradition, having roots in Durkheimian sociology and social functionalism. Following this tradition, Legare’s team’s more recent empirical and theoretical work focused on how rituals (1) provide reliable markers of group membership, (2) demonstrate commitment to the group, (3) facilitate cooperation with social coalitions, and (4) increase social group cohesion (Legare & Watson-Jones, 2015, p. 841; Legare & Wen, 2014; Watson-Jones & Legare, 2016; Wen, Herrmann, & Legare, 2015).

It is remarkable that concern about the social affiliative functions of rituals is completely missing in Legare’s earliest work on ritual, which focused on “the use of rituals for protective, restorative, and instrumental purposes” (Legare & Souza, 2012, p. 1). Here the authors were proposing “that the structure of ritual can be interpreted in light of intuitive causal beliefs about action efficacy or potency” (*ibid.*, p. 2). On the contrary, a more recent overview by Legare and Watson-Jones goes in a completely different direction, postulating that “to understand the ontogeny of ritual cognition, we must first examine the development of cognitive systems that support social categorization and social group cognition” (Legare & Watson-Jones, 2015, p. 838). This change of perspective, moving attention from causal intuitions to social cognition, is understandable, as it makes Legare’s work more resonant with some recent trends in the cultural evolutionary study of religion and ritual, which attend primarily to the social functions of these phenomena (Atkinson & Whitehouse, 2011; Norenzayan et al., 2016; Rossano, 2012). However, it should not overshadow other aspects of rituals, which may actually be more associated with the needs of an individual than with those of a group. These needs, too, have a tremendous impact upon the evolution of rituals and shape their cultural transmission, regardless of whether, how and to what extent they contribute to group living.

Ritualized Behavior, Threat Detection and Action Parsing

According to the ritual stance hypothesis, rituals and their evolution, ontogeny and cultural transmission are primarily associated with norm acquisition and social cognition. However, when we look at causal opaqueness and the other features of rituals from a broader perspective, we get a slightly different picture. What about rituals spontaneously invented by patients suffering from obsessive-compulsive disorder? Their invention does not seem to be associated with norm acquisition.

Cognitive anthropologists Pascal Boyer and Pierre Liénard (Boyer & Liénard, 2006; Liénard & Boyer, 2006) argue that immersion in ritualized behavior, such as that observed in patients with obsessive-compulsive disorder, represents a pathological side of behavior that spontaneously emerges also in normal children and adults as a response to activation of the so-called hazard-precaution system. When facing a potential (i.e., not transparent) threat, typically in the context of purification and food ingestion (vis-à-vis the risk of contagion), the activation of the hazard-precaution system accompanied by an increased level of anxiety motivates an appropriate behavioral response, revealing features of rigidity, causal opacity and goal demotion; there is a compulsion to conduct the behavior properly, like following a script.

Boyer and Liénard, as well as others, further propose that both immersion in or just observation of such behavior is accompanied by a stronger activation of the action-parsing system. Research on action parsing suggests that humans approach any action they deal with either on the level of (1) the event as a whole (e.g., making tea), which is composed of (2) episodes (e.g., preparing the water) themselves consisting of individual (3) gestures (e.g., pouring water into a kettle) (Zacks & Tversky, 2001). It seems that actual or merely observed ritualized behavior employs our attention to such an extent that it requires to be parsed by the cognitive system on the level of its elementary components (i.e., the gestures) (Nielbo & Sørensen, 2011), which demands a substantial amount of cognitive resources (Schjoedt et al., 2013). By being strictly focused on the gestural elements, this theoretical framework approaches ritualized behavior as essentially different from what is discussed in the literature under the umbrella of routine (i.e., a behavior which is conducted semi-automatically and therefore also perceived on the general level of the event as a whole) (Keren, Boyer, Mort, & Eilam, 2010).

The strict following of a script in the case of ritualized behavior (reflected in a high level of action parsing) may be explained as an evolutionary adaption in terms of the hazard-precaution system. As it is more advantageous to escape than not when facing the cue of a

nearby predator, regardless whether the predator is actually present or not (for the so-called false-positive response, see Sperber & Hirschfeld, 2004), it might be also safer to strictly follow ritualized procedures when uncertain regarding causality leading to a desired outcome of activity.

Proponents of the ritual stance theory attempt to integrate Boyer and Liénard's model of ritualized behavior into their own model of ritual (Kapitány, 2017, pp. 31–35; Legare & Watson-Jones, 2015, p. 837; Legare, Watson-Jones, & Souza, 2016, pp. 93–94). However, while doing so, they sometimes also slightly misinterpret the theory. For example, when Legare and Watson-Jones attempt to use one of the core elements of Boyer and Liénard's theory, the hazard-precaution system, they do so by mentioning that “[i]n collective rituals, fear of potential danger of not following the ritual rules (i.e., moral threat, social exclusion, or negative outcomes) may activate the hazard-precaution system” (Legare & Watson-Jones, 2015, p. 837; probably in reference to Liénard & Boyer, 2006, p. 823). This could give the impression that the core of Liénard and Boyer's theory is somehow associated with social cognition, group affiliation and norm transmission.¹ However, Boyer and Liénard operate on a different level, in which the norm acquisition is only secondary. The more common contexts for activation of the hazard-precaution system are associated with potential threats to an individual's health and survival (e.g., endangerment by contagion or contamination). In fact, according to Boyer and Liénard's model, engaging in a certain ritualized behavior could represent a survival advantage for humans in their evolutionary past, and afterwards culturally widespread collective rituals somehow parasitize onto it (Liénard & Boyer, 2006, p. 824).

Uncertainty, Ritualized Behavior and the Sense of Control

Since Bronislaw Malinowski wrote “Magic, Science and Religion” (1948 [1925]), a great deal of ink has been spilled on answering the question about the relationship between ritualized behavior and magic (or superstition) on the one hand and the experience of uncertainty, stress and anxiety on the other. In this essay, Malinowski remarks on the fact that

¹ Legare and her colleagues refer here to one passage in Liénard and Boyer's 2006 article, in which those authors discuss the implications of their theory for the cultural transmission of rituals and infer that “[a]n efficient hazard-precaution system should probably be slightly oversensitive, and therefore prey to the kind of cognitive capture described here. In collective ritual, people's insistence on the potential danger of not following the rules – expressed as moral reprimand (moral threat), as possible exposure to gossip or ridicule (threat of social exclusion), or as worry about misfortune is very likely to activate the hazard-precaution system” (Liénard & Boyer, 2006, p. 823; part of this quote is included in Legare, Watson-Jones, & Souza, 2016, p. 93).

his Melanesian subjects turned to magical rituals especially “in moments of real danger” (Malinowski, 1948, p. 13). According to his famous example, “in the Lagoon fishing, where man can rely completely upon his knowledge and skill, magic does not exist, while in the open-sea fishing, full of danger and uncertainty, there is extensive magical ritual to secure safety and good results” (*ibid.*, p. 14). However, unlike some of his predecessors, Malinowski did not think that this immersion in magic is driven by an ignorance of natural causality. Instead, he assumed that it is primarily “based on a specific experience of emotional states in which man observes not nature but himself, in which the truth is revealed not by reason but by the play of emotions upon the human organism” (*ibid.*, p. 67). In that way, he suggested a means of explaining how magic persists even under conditions where humans have good causal or even scientific knowledge. Although later scholars differed widely in their interpretations of how concretely the psychological explanation should be taken, cumulative evidence across disciplines supports the claim that there is a link between ritualized behavior and superstition and magic on the one hand and experienced uncertainty, stress or anxiety on the other.

This former observation has been most extensively researched in respect to superstition. Several studies explored the fact that people tend to develop superstitious practices especially when they face specific uncertainties or stressful situations. For instance, college students are revealed to be especially superstitious before difficult exams and athletes before important matches (Felson & Gmelch, 1979; Rudski & Edwards, 2007). The most widespread explanation is that engaging in a superstitious practice reduces stress by increasing one’s sense of control over the given situation (Langer, 1975). In respect to ritualized behavior, this supposition has been followed, for instance, by Martin Lang and his colleagues, who focused on the relationship between experienced anxiety and a tendency to ritualize otherwise ordinary behavior (Lang, Krátký, Shaver, Jerotijević, & Xygalatas, 2015). Drawing on Boyer and Liénard’s theory, these scholars understand ritualization as marked by the redundant, repetitive and rigid features of a behavior. To measure ritualization in the context of situational anxiety, the researchers asked their participants to clean a decorative object before giving a speech in front of an audience of experts. In the control group, the procedure was the same, except that there was no announcement of any experts being present for the speech. As predicted, the first group of participants (i.e., the one who were stressed to speak in front of experts) tended to structure their movements during the cleaning into rigid sequences of predictable clusters and often repeated the same movements (i.e., features typical of ritualization). The findings of these researchers support the hypothesis that ritualization in general may be, to a certain extent, a spontaneous response to situational anxiety and, more precisely, it may function as a coping

strategy to decrease overall perceived entropy and prediction error (Krátký, Lang, Shaver, Jerotijević, & Xygalatas, 2016).

Lang and his colleagues were concerned how ritualized behavior emerges as a response to perceived anxiety. Other research went further by documenting that the decrease in anxiety mediated by engagement in a ritualized behavior can even lead to an objective improvement during a subsequent performance. To test this hypothesis, Brooks and her colleagues (Brooks et al., 2016) used an experimental design to induce anxiety in participants, telling them that they will be singing the song “Don’t Stop Believing” by Journey in front of a researcher and that they would be paid based on their singing accuracy (up to \$5 extra). However, half of the participants were instructed to do the following before singing:

Please do the following ritual: Draw a picture of how you are feeling right now. Sprinkle salt on your drawing. Count up to five out loud. Crinkle up your paper. Throw your paper in the trash. (Brooks et al., 2016, p. 76)

As anticipated, the researchers found that participants who were asked to conduct the ritual sang more accurately than did the rest of the participants who were instead asked to sit quietly for a minute. Even subjectively, the participants who completed the ritual before the singing reported that they felt significantly less anxious. In another version of the experiment, the researchers corroborated these findings by means of heart-rate data.

In a series of other experiments, Brooks et al. further manipulated the amount of induced anxiety or whether ritualized behavior works better than a random behavior. Instead of requiring singing, these later studies measured the subsequent performance by means of math tasks. One important finding was that to produce the effect of reducing anxiety, it was important for the preceding ritualized action to actually be called “ritual.” Thus, it appears that to have this effect, ritualized actions need to have at least some cultural contextualization. However, Hobson and Inzlicht found this kind of effect even when the used procedures were not called rituals (Hobson & Inzlicht, 2016). Altogether, this set of research findings supports what might be called the palliative-ritual hypothesis, suggesting that the effect of ritual on subsequent performance is mediated by dulling the experience of anxiety associated with personal failure (Hobson & Inzlicht, 2016, p. 7).

Other research indicates that this is probably only part of the story. For instance, one study has demonstrated that children instructed to behave conventionally in a game (i.e., asked to adopt a ritual stance) scored better in a subsequent task measuring children’s executive functioning, and they were also able to delay gratification (not to immediately eat candy that had obtained) (Rybanska, McKay, Jong, & Whitehouse, 2017). Seen altogether, the body of

research suggests that the positive effect of ritual participation on subsequent activities is mediated by more than one means. One suggestion is that engagement in a ritualized behavior, with the focus of attention on a rigid performance following a script, underpinned by causal intuitions, increases perceived self-efficacy (Hobson & Inzlicht, 2016, pp. 5–6).

What is crucial for the purposes of this thesis is that it appears that the body of research on the impact of ritualized behavior on anxiety and subsequent performance sheds new light on the relationship between ritual and psychological well-being. I suggest that this perspective should be addressed more in the research in respect to both ultimate (evolutionary) and proximate (functional) explanations of ritual emergence and persistence in human individuals and cultures. Drawing on this research, I propose that research seeking both evolutionary origins and an individual ontogeny of rituals in their social functions (e.g., especially the cultural learning of conventions) might be on a wrong path, as—at least in the case of the types of rituals used in the experiments described above—these functions could be secondary instead, having only a limited impact on the cultural transmission of rituals. In addition, I argue that the new evidence concerning the psychological impact of rituals might be productively integrated with previous research on ritual efficacy, magical thinking and superstitious behavior.

Ritual Efficacy and the Case of Object-Transforming Rituals

By the term “ritual efficacy,” scholars designate beliefs concerning whether a ritual works or not for those who participate in it or observe it. What this “working” means is a matter of dispute in scholarly literature (Sax, 2010, p. 3). For the purpose of this thesis, I define ritual efficacy as a set of beliefs accompanying the desired effect of a ritual, often revealing clues of supernatural causal connections. Of course, these beliefs differ from one ritual participant to another and often deviate from what religious authorities propose as the normative understanding of the ritual, which will be of special importance especially when analyzing the historical material in Chapter 3 (“A Reverse History of Eucharistic Magic: Explaining Eucharistic Development in the Third and Fourth Centuries”). With that in mind, later in this thesis I argue that humans are more prone to form, transmit and accept this kind of belief in respect to rituals as they become more ritualized. For that reason, I also document the gradual ritualization of early Christian meals over the first few centuries of Christianity in Chapter 4 (“Ritualization of Early Christian Meal Practices: The Earliest Evidence”). In addition, while these beliefs are commonly implicit, in order to be further communicated and transmitted they need an appropriate conceptual framework. Under some conditions, as will be discussed in Chapter 5 (“The Lord’s Supper Tradition in Paul: A Cognitive Reconsideration of Pauline

Ritual Language”), this conceptualization can have decisive consequences for the attractiveness of the whole ritual. Taken together, the balance between the ritualization of a given activity (i.e., a communal meal) and the supernatural outcome expected by the participants can have important consequences for the cultural transmission of ritual. The concluding chapter of this thesis (“Modeling the Cultural Transmission of Rituals: An Agent-Based Model Contrasting Social Function and Cognitive Attraction”) attempts to model these consequences in relation to the potential effect of the social functions of rituals on the same process.

Numerous culturally widespread rituals involve the manipulation of certain material objects, which are believed to be transformed by means of a ritual procedure (blessing, purification, etc.). The modern Roman Catholic eucharist is a typical example. The bread and wine are ritually transformed by the person presiding over the ritual. From that moment on, these substances are believed to possess a supernatural quality, as Christ is somehow dwelling in them.² Subsequently, the transformed meal elements are consumed by the community, which receives something of the supernatural quality dwelling in these elements. The historical part of this thesis, which turns to the formative phase of these now highly elaborated ritual practices, is driven by an ambition to provide a better understanding of this development, in hopes that it may shed some light on the general topic of the relationship between ritualization, ritual efficacy, and the cultural transmission of ritual.

The earliest experimental research on ritual efficacy is associated with the ritual competence theory of Robert McCauley and E. Thomas Lawson (Lawson & McCauley, 1990; McCauley & Lawson, 2002). Drawing on this theory, Barrett and Lawson manipulated short descriptions of fictional rituals by ascribing a special quality either to the ritual agent, the ritual participants or the ritual action as such. By ascribing specialness to these elements, they aimed to form a connection between the structural element and supernatural agency; according to this theory, this was expected to increase the expected efficacy of the given ritual. In other words: “A woman striking a sick man with a staff does not cure him unless the woman, the staff, the man, or some combination of them has some special connection to an agent (or agents) with special qualities” (Barrett & Lawson, 2001, p. 185). Following that assumption in the experimental design, one participant could read this ritual description: “A special person blew ordinary dust on a field,” while another could get this one: “An ordinary person blew special dust on a field” (*ibid.*, p. 188). This theory further predicts that “because religious rituals are social actions and social actions require appropriate agents, having an appropriate agent for a

² Since I am primarily interested in an intuitive understanding of the concepts, I intentionally refrain from using the vocabulary of Roman Catholic theology in this context.

given ritual will be the factor judged most important in its success or failure after connection to superhuman agency” (*ibid.*, pp. 185–186). Consequently, the status of the person (i.e., their specialness) conducting the ritual (i.e., the act of blowing) should be the most decisive for an evaluation of the efficacy of the given ritual. To measure this, after receiving a list of similar descriptions, the participants were asked: “How likely is each of following actions to find favor with the gods and yield good crops? Please rate each action: 1 = extremely likely the action will work, 7 = extremely unlikely.” The experiment found support for this prediction (see also Feeny, Liénard, & Sørensen, 2006; for more detailed exploration of the theory, see Chapter 5).

The research on ritual efficacy conducted by Legare and Souza (Legare & Souza, 2012) was designed in very similar way (participants evaluated the efficacy of cursorily described rituals), but it focused on different aspects of rituals than those studied by Lawson and McCauley, and it used more ecologically valid ritual descriptions (the magical rituals called *Sympatia* are actually in usage in Brazil). As elsewhere, here also the authors approach rituals as “conventional, causally opaque procedures,” which “(1) are not bound by the same kinds of intuitive physical-causal constraints that characterize non-ritualistic actions and (2) lack an intuitive causal connection between the specific action performed (e.g., rubbing a ceramic pot) and the desired outcome or effect (e.g., making it rain)” (*ibid.*, p. 1). Legare and Souza hypothesize that in a situation where we observe a causally opaque action, where information about causal mechanisms is unavailable, we are highly prone to be influenced by information activating our intuitive biases in causal reasoning (i.e., repetition, number of procedural steps, and the specificity of procedural details) (*ibid.*, p. 2; see also Legare, Watson-Jones, & Souza, 2016, p. 88). They found, for instance, that a ritual with the instruction that it should be done “in the first day of the last quarter phase of the moon” is evaluated as more effective than a ritual where this instruction is missing; or a ritual involving a procedure to be repeated seven days in a row is perceived as more efficacious than one where this procedure is instructed to be done only once (see Legare & Souza, 2012, pp. 12–13).

For his doctoral dissertation entitled “Ritual Cognition: Ritualized Action and Artefact,” Rohan Kapitány designed and published a series of experimental studies drawing directly on the ritual stance hypothesis of Legare and her colleagues but elaborating on it further in respect to the research on cognitive processing of non-functional behavior (see esp. Kapitány, 2017, pp. 24–26; see also Nielbo & Sørensen, 2011). In one of his experiments, the participants watched videos in which there was either an artificial ritual containing a series of causally, instrumentally and motivationally opaque motor actions (experimental condition) or action sequences in which the actions were causally, instrumentally and motivationally transparent

(control condition) (Kapitány & Nielsen, 2015). Across the conditions, the video involved a person sitting in front of a table and manipulating glasses containing a liquid. Whereas the number of glasses and the procedures done with them differed across versions of the ritual, one procedure was ubiquitous: the person poured a golden-yellow drink from a small glass into a larger one. The differences were that, while in the ritual condition the smaller glass was raised vertically prior to the pouring, in the control condition this redundant, opaque action was omitted. Finally, while the glass subjected to the ritualized action sequence was raised and bowed toward the end of the sequence, in the control condition it was only inspected as if the level of the liquid in it was being checked. In addition, the authors further manipulated the cues by which the action was introduced: for half of the participants from both conditions it was preceded by fictional information of the following type: “This video contains elements of an established ritual seen around the world. The actions in this video can be seen in the Bwiti ceremony of Gabon, Africa,” etc. In this way, the authors formed four different types of stimuli packages: ritual action with context, ritual action without context, control action with context and control action without context.

Kapitány and Nielsen asked how the participants will form judgments about the contents of the ritually acted-upon glasses and hypothesized “that participants who observe opaque (ritualistic) actions... will be more likely to attribute a change in the object’s ‘specialness’... than those who observe transparent (ordinary) actions” and that “participants observing opaque actions will be more likely to desire/prefer ritualized objects compared to participants in control conditions” (Kapitány & Nielsen, 2015, p. 16). In that sense, they studied an object-transforming ritual analogical to the modern Catholic eucharist, as introduced at the beginning of this section. As a support for their hypotheses, they found that opaque actions made it statistically more likely that participants would report the presence of “specialness” within the object set and that opaque actions increased this likelihood more than the presence of context alone (see *ibid.*, pp. 18–21). As the authors put it, “the presence of opacity led to ‘special’ object-attributions, which in turn, led to greater preference for acted upon objects. Providing context, which served as a normative cue (i.e., these actions are the actions of a specific group of people), increased the effect” (see *ibid.*, p. 21). To gain better insights into the role of context, the second run of this experiment introduced the action sequences as either Satanic, Voodooist, or Wiccan (witchcraft). The authors expected that participant would display aversion to ritual objects described in these terms. Yet, this was not the case. Even under these conditions, the ritual actions increased the likelihood of exclusive preference for acted-upon objects (*ibid.*, p. 24).

Kapitány and Nielsen's findings are important, but when they turn to interpret them in the framework of the ritual stance hypothesis I find their arguments unconvincing. For instance, at one point, they interpret the fact that "opaque ritual acts continued to increase participants' preference for consuming acted-upon objects" as support for the prediction that "when confronted with opaque, ritual actions, we interpret them through a normative, social lens" (Kapitány & Nielsen, 2015, p. 25). With reference to their finding that the participants viewed the acted-upon objects as remaining "the same" over the action sequence, regardless of the condition, Kapitány and Nielsen infer that for these participants the ritual acts also "do not appear to systematically vary physical qualities of the objects" (*ibid.*, p. 21). After excluding this alternative, the only remaining reasonable option is to see the acted-upon objects through a normative and social lens. But a contextualization of their findings in terms of broader research on ritual efficacy, magical thinking and superstitious behavior might lead to a different conclusion.

For instance, another team of researchers was interested in whether performing a ritualized activity over a chocolate bar (or carrot, in a later version) can modulate subsequent enjoyment of its consumption (Vohs, Wang, Gino, & Norton, 2013). The participants were instructed to do the following: "Without unwrapping the chocolate bar, break it in half. Unwrap half of the bar and eat it. Then, unwrap the other half and eat it." The control group was simply instructed to first relax and then eat the unwrapped chocolate. The results revealed higher enjoyment in those ritually unwrapping the chocolate bar. Although the greater enjoyment cannot be simply interpreted as revealing supernatural beliefs concerning the object in the minds of the experimental participants, it still might be interpreted as somehow relevant in that respect, as such object appears to require a special approach on the intuitive level and the boundary between "specialness" of an object and its "supernaturalness" is not clear. In that respect, the study of Vohs and her colleagues echoes the extensive body of research on magical thinking and fetishism.

Magic and Fetishes

Ritual transformation is only one way among many enabling people to form an intuitive ascription of special or even supernatural significance to an object. It might be useful to take a brief look at other ways such ascriptions may be made. First, it seems that the history of an object is crucial in that respect: Who was in touch with the object or who did own it in the past? In other words, was the object in contact with something or someone considered to be of special or even supernatural significance? For us as humans, it is intuitive to believe that through

material contact between an object and a person (or between two objects or between two persons) there emerges a link between the two, as if something like an essence is transferred from the first to the second. Since the time of the seminal work of James G. Frazer (1911), this tendency has been called the *law of contagion*, which anthropologists and psychologists alike see as one of the building blocks of magical thinking, sympathetic magic or magic in general (Nemeroff & Rozin, 2000, pp. 3–4; Hutson, 2012, Chapter 1). Due to this principle or mechanism, we may ascribe special value to objects previously owned or touched by celebrities, for instance (Argo, Dahl, & Morales, 2008; Newman, Diesendruck, & Bloom, 2011). As a positive outcome of manipulation of these objects, it has been demonstrated that they have a capacity to increase our confidence in our own performance (Kramer & Block, 2014). As research with young children suggests (Gelman, Frazier, Noles, Manczak, & Stilwell, 2014; McEwan, Pesowski, & Friedman, 2016), the mechanism responsible for formation of these beliefs is deeply rooted in how our mind works.

The law of contagion is not the only mechanism with the capability to produce such perception of objects. Another mechanism with similar research history is the *law of similarity* (Hutson, 2012, Chapter 2). This is how Voodoo magic works, and there is evidence of this mechanism at work even in much more common situations than that. For instance, people maintain respect to depictions of certain objects or persons, even though these depictions are mere facsimiles. It might be useful to introduce one experimental study dealing with this phenomenon. In this study, the researchers investigated whether there is a correlation between one's emotional approach toward a certain object and a picture of it (Hood, Bloom, Donnelly, & Leonards, 2010). For the experiment, the participants were asked to bring with them to the lab a sentimental personal object they were emotionally attached to, like a teddy bear, etc. Subsequently, the experimenter took a photograph of it, which he gave to the participant together with photos of other two non-sentimental objects. The researchers then measured levels of physiological arousal in the participant while s/he was following an instruction to cut each photograph in half. Supporting the hypothesis that there is a parallel in emotional response toward an object and its depiction, cutting up the photograph of the sentimental possession produced significantly more arousal than in the case of a control object (Hood et al., 2010, p. 394). We can assume that something similar is at work when we accord special respect to depictions of statesmen, celebrities or religiously significant figures—we would not feel good destroying these, not only because they represent conventional symbols but also because of our susceptibility to magical thinking regarding significant objects.

The Approach to Ritual Advocated in This Thesis

In a recent integrative review article on the psychology of rituals, the authors list three basic regulatory functions of rituals often discussed in contemporary psychological research. These functions of rituals are in regulating (a) social connections (affiliation, cooperation, norm transmission), (b) emotions (mitigated anxiety, perceived control, certainty and orderliness), (c) performance goal state (personal mastery, self-efficacy, physical readiness) (Hobson et al., 2017, Figure 1). In this chapter so far, I tried to demonstrate that some scholars overemphasize the function of rituals in regulating social connections while dismissing the importance of their other two functions.

In the spirit of the cognitive science of religion, I have focused on the discussed cognitive mechanisms associated with the other two functions of rituals (and the biases and heuristics based upon them), which can be classified as ritual and magical intuitions. I further propose that a certain extent of activation of these mechanisms in those who participate in a ritual or observe it reflects what can be described as the overall cognitive attraction of that ritual or, to be more precise, of the whole practice-belief package. In my view, greater cognitive attraction³ means that a ritual is closer to a cognitive attractor's position (i.e., to a balanced state between the ritualization of given behavior and the effects it promises to produce in terms of magical thinking and ritual efficacy).⁴

For an overview of the theoretical approach to ritual proposed in this thesis, see Fig. 1.1, in which I clarify the most important terms introduced in the previous part of this chapter, which I use further in this study. On the most general level, I differentiate between what I call the *Practice-Belief Package* on the one hand (the gray box in the lower part of the figure) and the *Ritual and Magical Intuitions* on the other (the gray box in the upper part of the figure). The Practice-Belief Package is what we as researchers analyze when we either directly observe a ritual or have an evidence of how a ritual looks like now or looked like at some point in the past. From that perspective, we are interested in what elements constitute the practice and what

³ My usage of the term “cognitive attraction” is the same as the one made by Acerbi (2018) and elaborated by recent advocates of the “cultural attraction theory” (Morin, 2015; Morin, 2016). This usage slightly differs from what has been described by Sperber (1996) as cognitive attractors: a cognitive attractor is a position in n -dimensional space, while cognitive attraction as defined here might be expressed as a continuous variable. This is crucial for my later usage of this term especially in the last chapter on modeling.

⁴ To bow before a religious icon may be enough to bring you luck, but in order to be healed from serious illness more is needed (e.g., bowing three times a day for the whole year in front of an icon sanctified by a charismatic religious leader).

beliefs accompany it.⁵ The practice is typically constituted by a set of action structures, each including agents, actions and instruments, and these action structures reveal features of ritualization (goal-demotion, rigidity, compulsion and repetition). This is always happening in certain context.

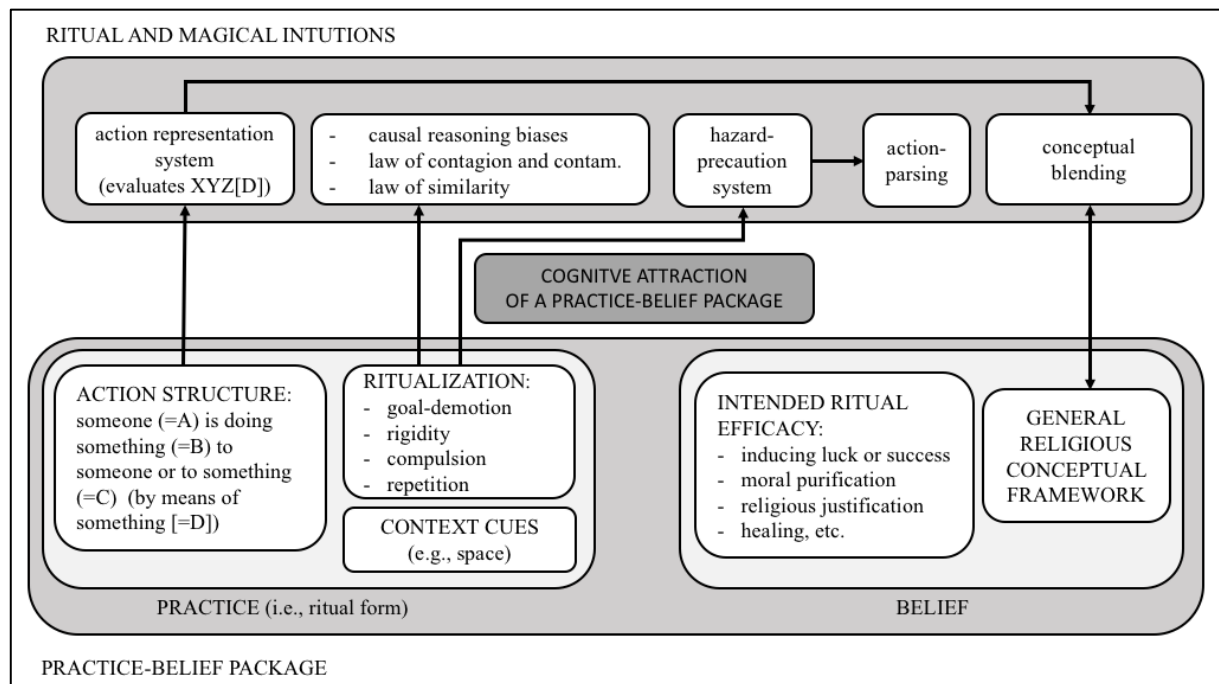


Figure 1.1: Cognitive model of ritual

Next to the practice, we commonly have at least a partial access to a set of culturally transmitted beliefs accompanying it (by carefully evaluating what the participants or religious authorities say about the ritual and what is said during the ritual). These beliefs express intended goal or outcome of the practice, frequently including supernatural features, and have been sometimes called ritual's efficacy. These beliefs rarely exist in an isolation. More commonly, they are part of a broader religious conceptual framework or worldview.

From the cognitive science perspective, we are especially interested in what these features of ritual (both the practice itself and the beliefs accompanying it) mean in respect to the functioning of human mind: What is happening in the mind of a person who either directly

⁵ Strictly speaking, from a cognitivist's perspective (i.e., by reducing the cognitive science reality to mental representations), what we grasp here as composing the practice are actually beliefs, too. To be more precise from that perspective, we would instead differentiate between first-order beliefs concerning the behavior itself and second-order beliefs accompanying those beliefs in a broader context.

participates in a ritual or just observes it, has some beliefs concerning the course and the goal of the ritual: What does this person remember from the event and how is she or he motivated to participate in the same event at the next occasion? To suggest and test hypotheses concerning these issues constitutes the core of the cognitive scientific approach to ritual. Thus, in the upper gray box we see some cognitive mechanisms which have been proposed to be activated in someone who is participating in or observing a ritual. According to the proponents of the above introduced ritual competence theory, to grasp the action structures, the mind uses the *action representation system*. In terms of the ritualized behavior model proposed by Boyer and Liénard, recognizing features of ritualization in the actions, the mind turns to *causal reasoning heuristics* and activates the *hazard-precaution system*, which subsequently leads to increased *action parsing*. Finally, the mind evaluates the features of the ritual with the intended goal or outcome of the ritual, as either directly associated with the ritual or as expressed in a broader religious context. In that respect, as suggested by the cognitive theory of magic developed by Jesper Sørensen (2007) and discussed extensively in Chapter 5, the mind often relies on some domain general conceptual heuristics, like *conceptual blending*.

I argue that the value of cognitive attraction is higher when there is a balance between the practice (the left side of the figure) and the beliefs accompanying the practice (the right side of the figure). Thus, for instance, everything else being equal, a ritual accompanied by beliefs in strong supernatural consequences to be achieved by proper participation in it (e.g. promising to a participant immediate healing from terminal disease) will be perceived as more attractive when containing highly ritualized features, while a ritual associated with much less extraordinary goals (like bringing grace) to be perceived as attractive will intuitively require substantially smaller extent of ritualization. Simultaneously, a highly complex ritualized practice promising rather small religious rewards, or a poorly ritualized practice coupled with radical supernatural consequences, will both be perceived as much less cognitively attractive.

When a ritual is perceived as being highly cognitively attractive, I propose that the people who participate in it are also motivated to repeat it in the same way over time, to propagate it among others and to defend it against available alternatives. Henceforth, in this thesis, I explore the hypothesis that cognitive attraction has significant impact on the cultural transmission of frequently repeated rituals, what could be of crucial importance especially in such pluralistic environments as the ancient Mediterranean of early Christianity, marked in

general by a high degree of experimentation in religious matters.

Conclusion

I opened this chapter by an overview of some recent cognitive and evolutionary theories of ritual and ritualization. I attempted to demonstrate why I am dissatisfied by the explanation offered by the proponents of the ritual stance hypothesis and proposed instead an account combining ritual competence theory, ritualized behavior and a recent research on ritual efficacy, magic and fetishism. I paid special attention to what I called object-transforming rituals, since the historical ritual under scrutiny in later chapters of this thesis falls under this rubric.

Toward the end of the chapter, I shortly summarized the overall approach to ritual advocated in this thesis. I explained what I mean by cognitive attraction in the context of ritual, that for a ritual to be perceived as cognitively attractive there has to be a balance between how much it is ritualized and what it promises in religious terms.

In what follows, I will try to demonstrate that there is substantial similarity between the beliefs ascribing special quality to certain material objects, shown in the experiments above, and the beliefs of early Christians in the special quality of the eucharistic meal elements. When coupled with collective ritualized actions, the historical practice-belief packages could reveal comparatively greater cognitive attraction than their less ritualized (e.g., more functional) counterparts, which could represent an important driving force for their cultural transmission. I suggest that it could even be of greater importance for the direction of the development of early Christian meals than the social functions of those meals. In that respect, early Christian history serves here as a case study to propose a more general hypothesis about the role of cognitive attraction in the cultural transmission of ritual.

Before delving deep into the historical sources, what is further needed is to evaluate the role of cognitive mechanisms operating on the level of individual minds in respect to long-term cultural processes involving many minds. For that purpose, the following chapter will introduce the theoretical framework of cognitive historiography.

CHAPTER 2: COGNITIVE HISTORIOGRAPHY AS A COGNITIVE SCIENCE OF CULTURAL DYNAMICS⁶

Introduction

This chapter contextualizes the topic of this thesis in terms of cognitive historiography in respect to the issue of cultural transmission. This contextualization is important for a correct understanding of the goal of this thesis, as it demonstrates how this study differs from other works seeking a link between cognitive approaches to religion and history. In addition to subscribing to an intuitive understanding of cognitive historiography as a specific sub-discipline of historiography, I would propose that it can also be seen as an integral part of cognitive sciences. By mentioning the general interest of historians in historical change and cultural transmission, I emphasize the specific role of historians in testing general hypotheses regarding these issues against their unique data. I advocate such a version of cognitive historiography, which follows the research logic of hypothesis-driven research. Furthermore, in partial contrast to the interest of the contemporary cognitive science of religion in experimental methods, I argue that the methods of mathematical and computational modeling are especially useful for the research agenda of cognitive historiography, which opens a space for the modeling approach I introduce in Chapter 6. Finally, I explore why it makes good sense to conduct this form of research in the field of the ancient Mediterranean and early Christianity.

The question “What is cognitive historiography?” can be answered in several different ways. Here I focus on its understanding in the context of the historical study of religion and cognitive science of religion.⁷ In terms of its theories, questions and methods, cognitive

⁶ An earlier version of this text has been published in Czech (Kaše, 2014). However, for the purpose of this thesis, the text was shortened and reorganized and a few new paragraphs have been added.

⁷ Historically speaking, the establishment of cognitive historiography as a field in the context of the historical study of religion is associated with the figure of Luther H. Martin. In the opening sentence to his short polemical commentary article published in the journal *Method & Theory in the Study of Religion* in 1991, Martin pointed out that “[o]ne of the several ironies that characterizes the modern study known as the ‘history of religions’ is that this approach has come to designate for many an essentially ahistorical method” (Martin, 1991, p. 115). From that point on, Martin sought how to change this situation by considering the potential of various naturalistic approaches

historiography is quite close to the increasingly popular research paradigm of cultural evolution (Mesoudi, 2016). Some scholars would probably consider it as a branch of that (e.g., Bulbulia et al., 2013). However, when it comes to the study of the dynamics of cultural systems, contrary to standard cultural evolution theory that focuses primarily on the mechanisms of imitation and the role of social learning biases (Richerson & Boyd, 2005), cognitive historiographers are mainly interested in content biases of innate psychology (Heintz, 2011; Morin, 2016). This second group of biases represents what I have described by the term “cognitive attraction” and what will be specified below in terms of a model of the epidemiology of representations. Behind that, I differentiate between two general ideal types of understanding of what can be meant by cognitive historiography in the context of the historical study of religion and the cognitive science of religion.

Cognitive Historiography as Historiography

The first ideal type views cognitive historiography as a specific type of historiography. It is a study of historical events and processes informed and inspired by findings of cognitive sciences, especially cognitive psychology. In this case, historians apply and further elaborate cognitive science findings to solve their own historical questions and open up new avenues of historical research. In the case of cognitive approaches to early Christianity, the ambitions vary between seeing the cognitive science approaches (a) as a new tool to solve rather traditional

in the study of culture, like sociobiology or memetics (Martin, 1996). In 1994, he made this problem a central topic of a monothematic issue of the journal *Historical Reflections/Réflexions Historiques* entitled “History, Historiography and the History of Religion” (Martin, 1994). As Martin emphasized ten years later (Martin, 2004, p. 245), the publication of this monothematic issue was an important moment for the “history” of cognitive historiography, as it represented the first study with an explicit attempt to demonstrate the potential of cognitive approaches in the study of religion for the historical study of religions (the study has been written by one of the founding figures of the cognitive science of religion, E. Thomas Lawson; Lawson, 1994). Over the following years, Martin gradually implemented cognitive approaches in combination with other naturalistic approaches into numerous theoretical articles concerning theory and methodology in the historical study of religion (e.g., Martin, 1996, 2005a, 2005b, 2011, 2012) and—in collaboration with a group of like-minded scholars of religion—organized a series of conferences and workshops forming a basis for subsequently published thematic volumes (Martin & Pachis, 2003, 2009; Martin & Sørensen, 2011; Martin & Whitehouse, 2004). However, not hiding the fact that he is a historian by profession, he continued to emphasize that he does not “intend to suggest that approaches to the past based on cognitive theorizing can or should replace the specialized methods of professional historians” (Martin, 2007, p. 51). Until now, the most visible outcome of this agenda-setting—which is growing in popularity especially among historians of ancient religions—is the launch of the *Journal of Cognitive Historiography*, the first issue of which was published in January 2014.

exegetical questions (e.g., Tappenden, 2016), (b) as a new paradigm for New Testament research (e.g., Czachesz, 2017) or (c) as an enrichment of and further stimulation for already established social-scientific approaches to early Christianity (e.g., Uro, 2016, pp. 31, 40). In that spirit, even when Czachesz develops a number of cognitive theories of religion far behind the current state-of-the-art in the cognitive science of religion (e.g., see especially his integrative approach to magic in Czachesz, 2013; Czachesz, 2017, ch. 6; Czachesz, 2018), in his most recent monograph he expresses that he is mainly motivated to use these theories in a “search of opportunities of gaining new insights about biblical materials” (Czachesz, 2017, p. 2). Similarly, when Uro acknowledges the role of models and hypothesis-testing in the study of early Christianity (Uro, 2017, p. 524), he fully follows the tradition of Social-Scientific Criticism (Neyrey, 2010), in which the formulated models and hypotheses are those concerning early Christian history. Thus, although these models and hypotheses are based on theories from contemporary social science, they are not formulated in an attempt to explain human social behavior in general (a proper interest of social—and cognitive—science), but driven by an interest to situate “the meanings communicated by the New Testament texts within their first-century contexts” (Esler, 1995, p. 3).

The current cognitive historiographers I list under this ideal type differ widely in how deep they go into the cognitive science literature and how innovatively they adopt the theories. However, what they share is that they write with a certain audience in mind—namely, other scholars with interest in historical research—in an attempt to prove the general prospects of these theories for their own historical discipline. The cognitive science approaches are here often combined not only with social scientific approaches, but also with some naturalistic trends in the study of culture and history. This is also the case of one of the founding figures of cognitive historiography, Luther H. Martin, who since the 1990s has primarily understood the cognitive approaches as one among many trends promising to transform the field of the “history of religions” into credible historiographical scholarship (see Martin, 1996).⁸

Cognitive Historiography as Cognitive Science

The second ideal type understands cognitive historiography as an integral part of cognitive science. It brings to the fore the question of how the study of historical events and processes can contribute to our understanding of human thought and behavior as studied by

⁸ Martin further considers the potential of memetics, sociobiology, so-called “deep history,” ecological history and network theory (see Martin, 1996, 2005a, 2005b, 2011, 2012).

cognitive science. This view is anchored in the broader implications of the so-called “cognitive revolution” initiated in the 1950s as a substantial revision of the production of knowledge in disciplines like psychology, linguistics or computer science (for a historical sketch of the cognitive revolution, see Gardner, 1985). Following this development, there emerged a collaborative platform between these disciplines as well as philosophy, anthropology and neuroscience, drawing on the view of the human mind as working analogously to a computer (i.e., approaching it as an information-processing device) (Miller, 2003). Although the understanding of cognition has changed considerably over the last thirty years (see, e.g., Newen, De Bruin, & Gallagher, 2018), the collaboration continues. From this standpoint, the emergence of cognitive historiography might be interpreted as the entrance of another discipline into this collaborative endeavor: cognitive historiography may thus be seen as a part of cognitive science studying the human mind through data from past minds.

According to this ideal type, a cognitive historiographer writes with an audience of other cognitive scientists in mind and attempts to contribute to the knowledge about general mechanisms driving human thought and behavior. I attempt to follow this second ideal type, which forms a difference between my own approach and the work of other cognitively oriented scholars studying early Christianity.

Generally speaking, it seems that this second way of conducting cognitive historiographical research is rather rare. Without doubt, historians further develop the cognitive scientific theories they adopt to an extent that it really enriches our understanding of general aspects of human thought and behavior (see examples in Slingerland, 2014b, p. 125–127). However, because these scholars typically choose a publication channel aimed at other historians and adopt a writing style that is characteristic of their own discipline, their insights hardly reach the audience on the science side. In that respect, they miss the ultimate goal of the second ideal type of cognitive historiographical scholarship.

When it is successful, how can the study of history of this second type contribute to the scientific study of human thought and behavior? Contrary to live participants of psychological experiments, according to Slingerland, working with “dead minds” has the following advantages: (a) they are an extraordinarily diverse bunch; (b) there are a lot of them; (c) they are easily accessed (especially as many textual traditions are becoming available in online, searchable databases); (d) you don’t need to pay them; and (perhaps most importantly) (e) you don’t need human subject approval to study them (Slingerland, 2014b, p. 123). In addition to these five points, as I will try to demonstrate below, I would suggest that since the data from the past minds commonly cover a lengthy time period, they also offer insights into long-term

cultural processes of cultural transmission. In my opinion, this might represent the main contribution of cognitive historiography to cognitive science.

Experiments with Past Minds

The first and second advantages of work with dead minds cited by Slingerland emphasize their number and diversity. This is an important point for the integration of cognitive historiographical research of religion into the cognitive science of religion framework. Inspired by evolutionary psychology, the cognitive science of religion relies on the idea of “stone-age mind” (Cosmides & Tooby, 1997, p. 12), that is, the conception according to which the historical period of the last few thousand years is too short for the human mind to evolve new adaptations overriding what it continues to possess as a result of several millions of years of life in small hunter-gatherer groups (Cosmides, Tooby, & Barkow, 1992, p. 5). Thus, empirical findings concerning the general functioning of human mind made in one cultural context should in principle be replicable in any other cultural context over these “last few thousand years.” However, this rarely occurs. As was emphasized by Joseph Henrich and his collaborators when pointing out the so-called WEIRD problem, the vast majority of experiments from behavioral sciences and psychology suffer from the fact that they have not been transculturally tested in this way. Instead, most psychological experiments have been conducted only on small samples of participants coming from Western (=W), educated (=E), industrialized (=I), rich (=R) and democratic (=D) societies, often first-year undergraduate psychology students (i.e., from a very specific group of humans which are far from being representative of the species over the last few thousand years as a whole) (Henrich, Heine, & Norenzayan, 2010).

The pioneers of the cognitive science of religion were well aware of this issue since the beginning. Thus, one of the first experiments examining the hypothesis on memorability of minimally counterintuitive concepts done by Pascal Boyer and Charles Ramble was replicated in three different cultural contexts: among French students from Lyon, ordinary inhabitants of the city of Libreville in Gabon and Tibetan monks from Kathmandu (Boyer & Ramble, 2001). However, the WEIRD problem is not only in the Western ethnocentrism of contemporary research, but also its inherent presentism; as suggested by Slingerland and others, it appears that the study of past minds is the only way to overcome this issue. Therefore, in the case that we have at our disposal substantial evidence about a population of past minds and their thoughts and behavior (e.g., in a form of certain textual corpus), we should not hesitate to use it for hypothesis-testing in a way analogical to conducting an experiment—it might represent a

valuable contribution to contemporary psychological research, which suffers from both ethnocentrism and presentism.

This research trajectory has been chosen, for instance, by Anders Lisdorf or Edward Slingerland and Maciej Chudek, who used material from their historical expertise to conduct specific types of studies designed with a psychological audience as the target group. To achieve this goal, they needed to code the data and to analyze them by means of quantitative methods understandable to the psychological community.

By means of quantitative analysis of the corpus of prodigies' reports (negative prophecies) from the Roman Republic, Lisdorf's study was designed to examine the hypothesis on better memorability of minimally counterintuitive representations in comparison to the memorability of bizarre concepts (Lisdorf, 2004). Lisdorf published his results in the *Journal of Cognition and Culture*, which usually publishes experimental studies based on contemporary societies, not ancient ones. Edward Slingerland, an expert in the field of early Chinese religion and philosophy, and Maciej Chudek quantitatively analyzed the corpus of texts from pre-Qin (pre-221 BC) China with an aim to test the hypothesis on human intuitive mind-body dualism formerly proposed by the developmental psychologist Paul Bloom (Slingerland & Chudek, 2011; see Bloom, 2004). Contrary to widespread opinions about Chinese holism (often viewed as contraevidence to Bloom's hypothesis), Slingerland and Chudek found that during the studied period a shift may be observed in the meaning of the crucial term under scrutiny *xin* (heart/heart-mind), which was increasingly used in contrast to the body (*xing/shen/ti*) and became slightly more associated with higher cognitive functions. This trend might be explained as resulting from a dualistic bias emerging in this culture over time, thus representing valuable support for the general psychological hypothesis (see also Slingerland, 2014a; Slingerland, Nichols, Neilbo, & Logan, 2017).

These two examples demonstrate an ideal way in which historians can enter the field of cognitive science marked by the experimental paradigm. In these cases, the success was enabled by the interest of these historians in general hypotheses concerning human thought and behavior, as well as by the adoption of quantitative methods. I suggest that the first element (interest in general hypotheses) is even more crucial than the second, as there are many quantitative studies of history irrelevant from the perspective of studying human thought and behavior in general. I argue that even when historians are not able to quantitatively test cognitive scientific hypotheses, it might be a valuable contribution to cognitive science if they formulate their research questions with these general hypotheses in mind in an attempt to further explore or elaborate on them in relation to the historical data.

Furthermore, in respect to quantitative methodology, it does not appear to be necessary for a historian to personally gain advanced knowledge of quantitative methods. What is a much more fruitful strategy, according to Slingerland, is to cooperate with experts from other disciplines and to join interdisciplinary teams (Slingerland, 2014b, pp. 128–129). What can make a historian an especially valuable collaborator in the eyes of other cognitive scientists is if she or he has access to an extensive sample of data to be considered as representative for a whole population of “dead minds.” In addition to that, if the data from “dead minds” reviewed through the experienced lens of a historian cover a long time period, the appeal of such a historian among other scientists should be even higher, as she or he has a unique access to data concerning long-term cultural processes which are hardly available to just any psychologist or anthropologist.

Anthropology and the Study of Cultural Dynamics

The topic of cultural transmission has been widely studied, especially in anthropology. It is worth noting that a majority of the founding figures of the cognitive science of religion were formerly anthropologists with this kind of interest. They typically began their academic careers by interpreting findings gained during field research among tribal societies (e.g., Boyer among the ethnic group of Fang people living in Gabon, Cameroon and Equatorial Guinea and Whitehouse by studying the Pomio Kivung movement operating in Papua, New Guinea). Boyer, who had formerly been interested in the stability of tradition in oral culture, began to take into consideration various findings from cognitive psychology concerning the functioning of human memory (Boyer, 1990); subsequently, he turned his attention to the way in which humans learn new concepts. Drawing predominantly on literature from the discipline of developmental psychology, Boyer later differentiated between four types of culturally widespread mental representations, whose functions he demonstrated while using the material from his original field research (Boyer, 1992).⁹

⁹ Boyer differentiated between the *ontological* repertoire (representations consisting of elementary assumptions about what sorts of things there are in the world), the *causal* repertoire (representations of causal connections between entities and events), the *episodic* repertoire (representations concerning a certain range of event types, typically associated with human specific cultural activities), and the *social roles* repertoire (representations attributing certain humans special properties, etc.); see Boyer, 1992, pp. 35–36. According to Boyer, the study of all these four repertoires is crucial for explaining religious ideas. However, in his later work he primarily focuses on the first type of representations.

Harvey Whitehouse has also been primarily fascinated by the research of human memory. This is evident already from his first article, which contains rough contours of what would later become known as the theory of two divergent modes of religiosity (Whitehouse, 1992; see Whitehouse, 1995, 2000, 2004). In this article, Whitehouse formulated the hypothesis that the occurrence of two divergent types of ritual dynamics (which he had documented among two groups from Papua, New Guinea) is driven by the repetition of the rituals relying on two different types of memory: “The different types of religious experience available to the Baktaman and to Kivung members ensue from divergent principles of codification, which in turn represent adaptations to differential demands on memory” (Whitehouse, 1992, p. 792).

The third noticeable figure with an anthropological background who exerted a strong influence on the formation of the cognitive science of religion has been Dan Sperber. According to Sperber, to explain culture means being able to answer the question “why and how some representations happen to be contagious” (Sperber, 1996, p. 1), which means being able to demonstrate how their spread results from relatively general mechanisms at work in specific situations (*ibid.*, p. 41). To understand these processes, Sperber introduced the model of the epidemiology of representations. Using a medical analogy, Sperber emphasizes that “[w hat pathology is to epidemiology of diseases, psychology of thought is to epidemiology of representations” (*ibid.*, p. 59). Therefore, according to Sperber, “an epidemiology of representations does not study representations, it studies distributions of representations (and therefore all the modifications of the environment which are causally involved in these distributions)” (*ibid.*, p. 75).¹⁰

What deserves to be emphasized here is the general logic of this research. These anthropologists were used to doing fieldwork, from which they stepped back to interpret the data they had collected in an attempt to contribute to a broader theoretical discussion. This is a common practice in their discipline. We have already seen this move from the field to theory in the case of Malinowski (see Chapter 1), who, after observing a link between perceiving uncertainty and delving into magical rituals among his Melanesian subjects, presented this finding as a contribution to our general knowledge about human thought and behavior. What is remarkable is that this interest in general topics is very rare in historical scholarship—or at least very rarely explicated there. It seems as if historians are used to remaining in their field for their

¹⁰ The other founding figures associated with the emergence of the cognitive science of religion, E. Thomas Lawson and Robert N. McCauley, turned to the issue of cultural transmission, especially in their second book on ritual competence theory, where they extensively draw on Sperber’s epidemiological model (see McCauley & Lawson, 2002, pp. 39–45).

whole career while mainly targeting their scholarship at other historians conducting research in the same area. Cognitive historiography as a cognitive science seeks to change this by attempting to interpret findings from historical research as findings of cognitive science.

From Anthropology to Experimentation

During the 1990s, with Boyer in the vanguard, the rising generation of scholars in the emerging field of the cognitive science of religion started to sideline their former interest in issues of cultural dynamics. It was because these scholars decided to marry the cognitive approach to religion with experimental psychology. In that spirit, Boyer rejected standard anthropological methodology as insufficient to solve psychological questions (Boyer, 1993, pp. 6–7). As a result of this, during the following decade, the cognitive science of religion entered successfully into the field of experimental psychology, which even began to transform for its own purposes to become more able to deal with issues associated with cultural diversity and related topics (as in the case of pointing out the WEIRD problem). Simultaneously, however, this turn resulted in all the theoretical insights concerning cultural transmission (so stimulating for the emerging field of cognitive historiography and for the subject of this thesis) becoming empirically overshadowed, as it was not clear how to target them in an experimental design.

Following this shift, there emerged a paradoxical situation in which a number of psychologically oriented scholars continued to refer extensively to the former models dealing with long-term cultural processes in the theoretical part of their work (e.g., Sørensen, 2004), while at the same time they did not suggest any way how to study these issues empirically. When Jesper Sørensen doubts whether “particular historical events can serve as testing cases for predictions made by social and/or cognitive theories” (Sørensen, 2011, p. 185), he also considers it worth emphasizing the following:

This is trickier as it is unclear how historical material can test particular hypotheses rather than the mere adequacy and, ultimately, the relevance of their *application* to a given historical material. In fact, such endeavors generally end up using historical cases as more or less well-founded illustrations of particular theoretical claims. As such, historical cases are more likely to function as an indication of the fruitfulness or prospects of a theoretical construct rather than an actual test. More rigorous testing of particular hypotheses is better performed in a laboratory setting or, perhaps, in “natural experimental condition” during field studies of living societies. (Sørensen, 2011, p. 186–187; italics original)

It is unclear how Sørensen imagines either laboratory or natural experimental testing of hypotheses concerning long-term cultural processes and how they could be studied while relying on “living societies” only. If our goal is to test hypotheses arising, for instance, from

Sperber's epidemiological model, the method of psychological experiment conducted on living societies is in principle insufficient, regardless under what conditions we apply it, because the impact of some important mechanisms can be revealed only on the level of transgenerational transmission.

To restrict proper scientific methodology to the ideal of an experiment would be an extremely narrow view of the scientific endeavor. In any case, the problem probably lies rather in particular methods than in theories. Thus, the question is which methodological alternatives to the experimental ideal that we possess are useful for addressing the issue of long-term cultural processes.

From Experimentation to Modeling

Since the second decade of the new millennium, the limitations of psychological experiments for the scientific study of religion has been fully recognized by a number of scholars. In 2012, Joseph Bulbulia and Edward Slingerland published in the religious studies journal *Numen* an article with the proclamative title "Religious Studies as a Life Science" (Bulbulia & Slingerland, 2012). Here the authors argue for a higher integration of religious studies into "life sciences," among which they list cognitive science, social affective neuroscience, behavioral ecology, evolutionary psychology and evolutionary dynamics. By this, they lift the cognitive science of religion from the narrow experimental psychological discourse and locate it within a broader framework of other life science disciplines. At the same time, they emphasize that this version of the naturalistic study of religion does not seek to promote an abandonment of humanities scholar's expertise characterizing the discipline. On the contrary, here and in a few other articles (e.g., Slingerland, 2008) these authors argue that "when it comes to the scientific study of human-level phenomena, scholars with humanities expertise need to be on the ground floor of basic theorizing and experimental design, and not seen merely as passive providers of cultural and historical data" (Slingerland & Bulbulia, 2011, p. 323).

With that said, we can ask what criteria have to be fulfilled by cognitive historiography attempting to be an integral part of cognitive science in order to be considered as a part of this life science discourse? In any case, it does not mean resigning from humanities' methods, theories and questions and becoming limited by methods, theories and questions derived from experimental psychology. Instead, what seems to be of much higher importance is to orient the logic of research to become hypothesis-driven (Bulbulia, Wilson, & Sibley, 2014; see also Bulbulia & Slingerland, 2012, pp. 567–568). It is possible to reach this goal in many more ways

than by adopting experimental methods. However, it seems that this has not been fully realized by the cognitive science of religion community (see Xygalatas, 2014).

It might be helpful to look at Sperber's updated clarification of what he means by the epidemiological analogy. Comparing the relation between psychology and cultural epidemiology with the relation between pathology and medical epidemiology, Sperber clarifies the term "naturalistic ontology" in the following:

Epidemiology has its own concepts but not its own ontology. Its concepts are defined in terms of those of other disciplines: individual pathology, ecology, demography. Because it draws on several other disciplines, epidemiology is in a relationship of mutual relevance with all of them and of reduction with none of them. It is genuinely autonomous discipline, with strong bridges to other disciplines, and without an autonomous ontology. Because the sciences from which it borrows its ontology are natural sciences, epidemiology is unproblematically a natural science too. (Sperber, 2011, pp. 67–68)

Given that Sperber here and elsewhere pays so much attention to various implications of the medical analogy, it is surprising that he does not consider it in respect to methodology.¹¹ However, medical epidemiology relies on a set of sophisticated and well-established methods of mathematical and computation modeling, which often overlap with methods used by population biology (Brauer & Castillo-Chavez, 2012). Therefore, being faithful to Sperber's analogy, there is no reason why the methodology of mathematical and computational modeling could not also be used in the case of cultural epidemiology. In other words, the methods used by medical epidemiologists and population biologists promise to offer a toolkit for scientific hypothesis-testing based upon Sperber's cultural epidemiological model. The wrong assumption, leading some scholars to principal skepticism, has been that the ideal scientific method for the study of culture is the one of experimental psychology. But this type of experimentation represents only a very narrow scope of the methodology used by the life sciences. What seems to be more needed is a stronger attempt to principally mathematize the historical processes, not necessarily to bring them to the lab.

Some inspiration for this logic of research might be found in the ambitious project of cliodynamics proposed by the population biologist Peter Turchin. According to Turchin, historians gave up the attempt to formulate general theories and to test them too early (Turchin, 2011, p. 115). With the potential development of historiography in mind, it might be useful to

¹¹ It seems that Sperber is quite skeptical concerning the testability of the model, as he considers it probabilistic (see Claidière & Sperber, 2007, p. 97).

look for inspiration in the history of evolutionary biology. Here the important turning point is associated with the advent of mathematical modeling (*ibid.*, pp. 171–172). With mathematical modeling, it became possible to reformulate generally expressed hypotheses into particular predictions, which could be subsequently compared with available data derived from observation. As Turchin emphasizes, scientific predictions are not about the future, but represent primarily a tool how to test theory against available data (*ibid.*, p. 169). These data might be derived from historical sources, too. Logically inferred, other data to be used to test the hypotheses dealing with long-term cultural processes (i.e., in principle historical) are simply not available.

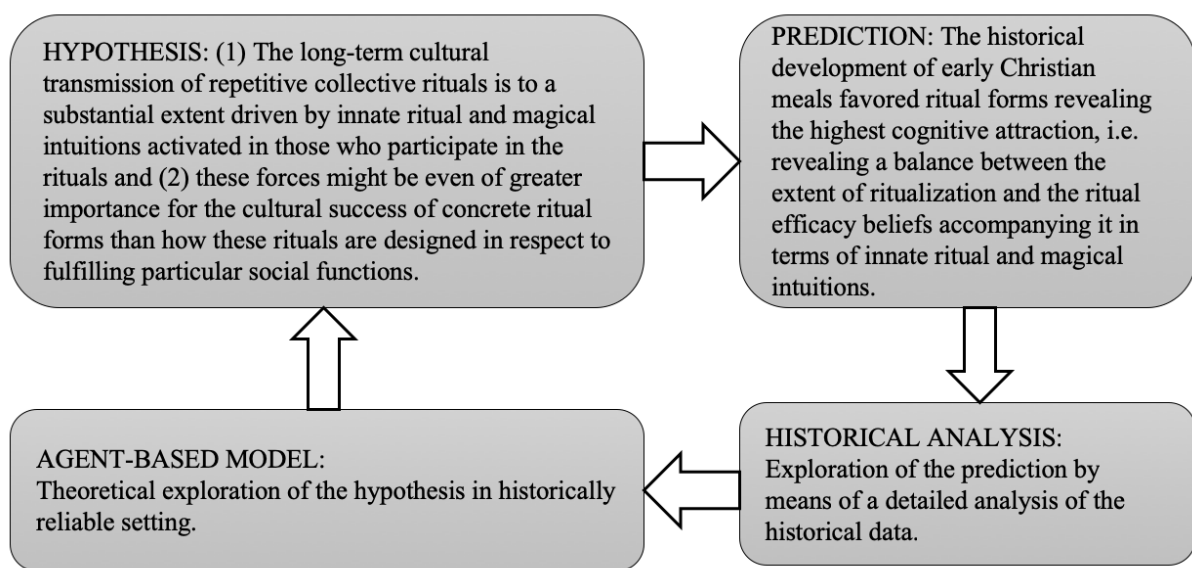


Figure 2.1: Research logic of this thesis

Although it is probably impossible to meaningfully quantify the historical process of the ritualization of early Christian meals and to test our hypothesis against this data in a strict sense (i.e., by statistical evaluation of the fit between the model and the data), it is stimulating to work with this research logic as an ideal to be followed, at least in designing the research. Thus, simply expressed, there is a hypothesis concerning the long-term cultural transmission of rituals, focusing on the role of cognitive attraction (see Figure 2.1). Following the terminology of Turchin’s predictive historiography, this hypothesis might be related to the historical reality of early Christianity by formulating a prediction claiming that the factor of cognitive attraction was a force that guided the trajectory of the development of early Christian meals. This is done in the following three chapters, where I explore the reliability of this prediction by a detailed analysis of the historical sources. Finally, in Chapter 6, inspired by this exploration of the

historical sources, I explore the hypothesis further in respect to theory by means of an agent-based model.

Over the last few years, the method of agent-based modeling is gaining increasing popularity in the cognitive science of religion (see Nielbo, Braxton, & Upal, 2012; Czachesz & Lisdorf, 2013; Lane, 2013). It appears that this methodology is very well suitable for cognitive science research in general (Sun, 2006; Lane & Schults, 2018). As I will demonstrate in Chapter 6, when building an agent-based simulation, the researcher works with a “population” of artificial agents designed to behave according to certain rules. In social scientific research, these rules are designed to imitate human cognition and behavior. Thus, the artificial agents typically have an algorithmically specified “memory” or “perception”, which they use to “decide” what they will do and how they will interact with other agents in a future state of the simulation. It is interesting that even very simple rules produce very complex behavior of the population revealing features of real-world societies (cf. the pioneering model of social segregation by Thomas Schelling [1971]). Thus, these kinds of models are an ideal tool to explore the impact of rather simple rules on the individual level upon population level processes. This makes this methodology especially relevant for exploring the role of individually perceived cognitive attraction upon long-term cultural transmission of rituals. In that sense, however, the computational model is not intended as an empirical test of a hypothesis but rather as its exploration for theory-building purposes. In this spirit, in Chapter 6, I will be interested in whether a model inspired by the historical environment under scrutiny can contribute to further explore reliability of my main theoretical hypothesis.

It is remarkable that Harvey Whitehouse also formed a team of experts on computational modeling to create an agent-based model to test certain predictions of his theory of the two modes of religiosity (Whitehouse, Kahn, Hochberg, & Bryson, 2012). In this way, he again confirmed his interest in the dynamics of cultural systems, shared by both anthropologists and historians.

The Ancient Mediterranean as a Laboratory of Cultural Transmission

It remains to be answered why the cognitive historiography viewed as an integral part of cognitive science should turn to the distant past of the ancient Mediterranean and the historical development of early Christianity. From the perspective of science, would it not be

more promising to study more recent historical processes? I offer three reasons why the choice of the ancient Mediterranean under the Roman Empire makes very good sense.

First, like any premodern period, the ancient Mediterranean was free of the impact of print and mass media, including newspapers, advertisements, etc. (Eisenstein, 2005). This means that the transfer of information, including cultural transmission of religious representations and forms of behavior, directly depended on the spatial movements of people and the translocal connectivity of social networks (Scheidel, 2014; Price, 2012; Woolf, 2016a, 2016b). In such an environment, the spread of religious representations and forms of behavior is much more directly affected by factors of cognitive attraction or social function than in an environment of relatively isolated tribal societies, such as those commonly studied by anthropologists.

Furthermore, the ancient Mediterranean at the time of the spread of early Christianity was also a period marked by relative cultural unity on the one hand and relative freedom in religious matters on the other (Vaage, 2006). Because of these properties, we might expect a good fit between the actual popularity of some religious ideas and forms of behavior and how these ideas and forms of behavior are affected by the factors of cognitive attraction, social function etc.

Finally, in our period of interest (i.e., especially before the so-called turn of Constantine), Christianity itself was a highly divergent phenomenon, in which, as will be demonstrated over the following three chapters, numerous different versions of religious concepts and practices competed to become widespread across the whole Christian population. This fact offers very useful evidence for comparing the role of cognitive attraction and social functions in the processes of cultural transmission within one population. Along these lines, in this thesis I turn to the history of early Christianity with a hypothesis concerning the role of cognitive attraction in the cultural transmission of rituals, which I explore while studying the changing forms of early Christian ritual meals.

Conclusion

In this chapter, I sketched my own view of the discipline of cognitive historiography. I contrasted two forms of it: cognitive historiography as historical scholarship informed by cognitive science and cognitive historiography as an integral part of cognitive science, studying general aspects of human thought and behavior. In respect to the second, I emphasized the role of hypothesis-driven research of historical processes in general and suggested the potential of

the methods of mathematical and computational modeling for conducting this kind of research on historical material.

The unique access of historiography to the long-term cultural processes means that it is of at least the same importance for the scientific study of human cognition and religion as psychology, anthropology or other disciplines, as these are able to study human-level phenomena on a much smaller scale of either only a few individuals or small population samples over a short time period. In the following chapters, I use this framework when approaching the early Christian meal practices and the beliefs associated with them. I study these with an explicitly stated hypothesis and prediction, not only with the aim to get a better understanding of the given historical process, but also in an attempt to gain a better understanding of the role of different factors in the cultural transmission of rituals in general.

CHAPTER 3: A REVERSE HISTORY OF EUCCHARISTIC MAGIC: EXPLAINING EUCCHARISTIC DEVELOPMENT IN THE THIRD AND FOURTH CENTURIES

Introduction

In this chapter, I offer a historical scenario of eucharistic development in the third and fourth centuries CE. Focusing on the “lived religion” aspect of early Christianity, I deal especially with those features of the eucharist which can be interpreted in terms of magical thinking and superstitious behavior. It appears that study of those features of the eucharist has been neglected in recent scholarship on the history of the eucharist, partly because they have been considered to be associated only with a much later period and partly because of a lack of suitable analytical concepts and theories. I will demonstrate that several third-century sources concerning the eucharist already indicate the widespread presence of popular beliefs and practices revealing features of what can be described as eucharistic magic. I hypothesize that the popularity of those beliefs and practices since the third century onward can be satisfactorily explained, first, by the preceding gradual ritualization of early Christian meal practices during the first two centuries of Christian history and, secondly, by the further intensification of external, anxiety-producing conditions faced by Christian communities during the third century. In this part of the thesis, I rely especially on four interrelated assumptions.

First, I challenge the interpretation of early eucharistic development that locates a turning point in the reign of Constantine and the changes associated with it. Instead, following some contemporary trends in early Christian studies, I see the reign of Constantine more as a continuation and intensification of ongoing processes than as the beginning of a completely new period (see below).

Second, I adopt the perspective of “ancient lived religion” (Raja & Rüpke, 2015; Rüpke, 2012): “Instead of starting from religious organisations, elaborated belief systems and their always insufficient reproduction by individual members and believers, ‘lived religion’ focuses on the individual’s ‘usage’ of religion” (Raja & Rüpke, 2015, pp. 12–13). Therefore, even though I rely mostly on literary accounts produced by Christian elites, I do not use these sources to reconstruct the theological norms promoted by these elites. Instead, I use these sources to

trace the individual usage of religion. As will become evident below, this approach is not received well by liturgical scholars studying the history of the eucharist.

Third, the explanation of the process under scrutiny offered especially in the second part of this chapter draws extensively on recent psychological research on magical thinking and superstitious behavior, which is in this thesis originally integrated with cognitive theories of ritual and ritual efficacy. Following that, I introduce empirical research aiming at identifying a correlation between an increased level of stress or anxiety on the one hand and higher inclinations toward superstitious beliefs and practices on the other. I suggest that, taken together, these external theoretical insights and broader contextual observations can help us to identify some “hidden powers” guiding the religious behavior of ancient people, as well as modern ones, in order to improve our understanding of their motivations and decision-making processes even in cases where we do not have enough first-hand data.

Finally, I adopt the interpretative method of reverse history. I start with a sketch of the popular eucharistic beliefs and practices of the late fourth century and try to trace them back in time with the changing religious and cultural environment under investigation. I assume that with this interpretative method I can gain a better understanding of some historical patterns than if I were to adopt a chronological approach.

The Fourth Century: Popular Beliefs and Practices Regarding the Eucharist

A number of sources from the late fourth century reflect a widespread practice of individuals keeping the eucharist after the ritual to be used privately for their own purposes: as an amulet while traveling, as a household-protecting aid or as a magical healing substance, which was either ingested or only touched. It will be useful to introduce at least a few sources to demonstrate that these kinds of beliefs and practices were not only popular but also generally accepted by Christian elites.

For instance, in an oration for his deceased brother, Ambrose of Milan¹² tries to demonstrate the piousness of his brother by reporting that once, when in danger of being shipwrecked, he asked those with him to give him an “aid for his faith” (*fidei suae consequeretur auxilium*), namely, the eucharist, which he “bound in a napkin, and the napkin

¹² The proper names of ancient authors have the common English form. Names of ancient works are in the form of their Latin version where commonly known.

round his neck (*Etenim ligari fecit in orario, et orarium involvit collo*),” and then jumped into the sea: “And so believing that he was sufficiently protected and defended by this, he sought no other aid (*Itaque his se tectum atque munitum satis credens, alia auxilia non desideravit*)” (Ambr. *De excessu fratris* 1.43; *MPL* 16, p. 1604; *NPNF* 2.10, p. 397/168).¹³ Similar usage of the eucharist is also documented by Augustine of Hippo, who, in one of his incomplete works, shares a story about a woman who cured her son from blindness by placing the eucharist on his eyes (*Iulian; opus imperfectum* 3.162; *CSEL* 85/1, pp. 467–468).

Giving us a hint about this trend in a completely different area, Basil of Caesarea reports that in Alexandria and in Egypt “each one of the laity, for the most part, keeps the communion at home (ἔχει κοινωνίαν ἐν τῷ οἴκῳ αὐτοῦ), and whenever he wishes partakes of it by himself.” Basil uses this reference to support what he considers to be a common practice, that under certain conditions (i.e., the threat of persecution) “when no priest or deacon (ἱερέως ἢ λειτουργοῦ) is present,” it “is not a serious offence” for the laity to take the communion by their own hands (τὴν κοινωνίαν λαμβάνειν τῇ ἰδίᾳ χειρ) (Bas. *Ep.* 93; *MPG* 32, pp. 484–485; Eng. trans. Freestone, 1917, p. 41; see also Stone, 1917, p. 14).

The *Traditio apostolica*, a highly composite text of Eastern provenance from the late fourth century or even later, takes keeping the eucharist (i.e., the practice of carrying the eucharistic elements from the liturgy and storing them at home) for granted when it suggests the following: “Let every faithful [person] take care to receive the eucharist before he tastes anything else. For if he receives in faith (*ex fide percipit*), even if something deadly (*mortale quodcumque*) shall be given to him after this, it cannot harm him” (*Trad. Ap.* 35). At the same time, however, it admonishes: “Let everyone take care that an unbeliever does not taste of the eucharist (*ut non infidelis gustet de eucharistia*), nor a mouse nor any other animal, nor that any of it falls and is lost. For the body of Christ is to be eaten by believers and not to be despised (*Corpus enim est Chr(ist)i edendum credebant et non contemnendum*)” (*Trad. Ap.* 36; Latin text according to Hauler, 1900, pp. 117–118; Eng. trans. Bradshaw et al., 2002, pp. 180, 182).

At least in some locations, these practices continued to blossom over the following centuries. Reflecting on the situation in the East in the late sixth century, John Moschus reports that in Palestine the laity takes the eucharist on Holy Thursday and keeps it home for the whole year (*Pratum spiritual* 79; Taft, 2003, p. 3). In the West, the biographies of Irish monks from

¹³ To minimize the amount of footnotes, the Latin and Greek citations are intentionally posited in-text, even when this may be disrupting. For an explanation of used abbreviations, see the List of Abbreviations at the beginning of the thesis. In the case of ANF and NPNF, the reference to particular pages has the following form: the page in the officially produced PDF/the page in the edition on the basis of which the online text was formed.

the same period attest that they traveled with a vessel called a *chrismal*, containing the sacrament of bread, which they used as a path-protection (Gaelic: *coimge conaire*; see Freestone, 1917, p. 56; see also Dölger, 1936).

In fourth- and fifth-century Rome, there was also the practice called *fermentum*, consisting of the sending of the eucharistic elements consecrated by the Roman bishop to the remaining titular churches in the city. Innocent wrote about this practice to Decentius of Gubbio:

Concerning the *fermentum*, which we send to the titular churches on Sundays, it is needless for you to ask, for all of our churches are set up within the city. As to the presbyters who are not able to join with us (in the main eucharist) on Sundays because of the people they serve, they receive the *fermentum* made by us from the acolytes, so that they may not judge themselves separated from our communion, especially on Sundays. This practice ought not be observed in the outlying churches nor in the cemeterial churches, for we have assigned presbyters there who have the right to confect the sacrament (which in the first place should not be carried too far). (Trans. Baldovin, 1987, p. 123; see also Baldovin, 2005, p. 44)

This practice is also documented in the *Liber pontificalis*. According to this source, the Roman bishop Miltiades (310–314) already claimed that “consecrated offerings from what the bishop consecrated [called *fermentum* should be sent around the churches” (*Ab eodem die fecit ut oblationes consecratas per ecclesias ex consecratu episcopi dirigerentur, quod declaratur fermentum*)” (*Lib. pont.* 33.2; Latin text according to Duchesne, 1886, p. 168; Eng. trans. Davis, 1989, p. 14; see also Baldovin, 2005, p. 44), while Bishop Siricius (384–399) insisted that “no priest should celebrate Mass every week without receiving the guaranteed consecrated element from the designated bishop of the place (*Hic constituit ut nullus presbiter missas celebraret per omnem ebdomadam nisi consecratum episcopi loci designati susciperet declaratum, quod nominatur fermentum*)” (*Lib. pont.* 40.2; Latin text according to Duchesne, 1886, p. 216; Eng. trans. Davis, 1989, p. 30; see also Baldovin, 2005, p. 50). It is not our task here to analyze the functioning or appearance of this practice in any detail (for a discussion on this, see Baldovin, 1987, 2005). However, it might be useful to ask how it was understood by contemporaries. Innocent emphasizes that the main motivation for it is to prevent the presbyters from feeling separated from the communion of the bishop. This interpretation seems to be accepted by a majority of modern scholars, too (see Baldovin, 2005, pp. 45, 47, 53). But, when we consider this practice in respect to the popular eucharistic beliefs and practices of the time, it is possible to discern a feeling that the eucharistic elements consecrated by the bishop were somehow perceived more valuable (or powerful) than those consecrated by an ordinary priest.

Taken together, all the evidence from the period under review suggests that the eucharistic elements were generally viewed as objects possessing a supernatural power and efficacious even when removed from the proper liturgical setting of communal consumption. It is remarkable that this was a long time before the “golden age” of eucharistic devotion characterizing the medieval Church. In that respect, it would seem that our evidence from the late fourth century has more in common with the “superstitious” beliefs of the Middle Ages than with the ideal of communal meals of the earlier Christian communities. Below I will try to challenge this impression.

The Fourth Century: Eucharistic Theology and Liturgy

What was the link between the popular beliefs and practices concerning the eucharist on the one hand and the eucharistic theology and liturgy of the period on the other? Reviewing the positions of the most influential eucharistic theologies of late antiquity, Joseph Wawrykow summarizes the most widespread opinion concerning the so-called “eucharistic presence”:

All affirm a presence of Christ in the sacrament that is distinctive and irreducible; for almost all, this affirmation shapes the presentation of Eucharist. An older scholarly convention, of pitting “realists” against “symbolists”, as if it were not possible to affirm Christ’s presence while insisting on the sign-character of this sacrament, seems increasingly untenable. For all of these authors, what was bread becomes in the liturgy, really, the body of Christ.¹⁴ (Wawrykow, 2012, p. 63)

Thus, for instance, Cyril of Jerusalem claims that the eucharist, “which seems to be bread [... is not bread, though it tastes like it, but the Body of Christ (ὁ φαίνμενος ἄρτος οὐκ ἄρτος ἐστίν, εἰ καὶ τῆ γε εἰ αἰθητῶς, ἀλλ’ ὥμα ρι τοῦ), and that which seems to be wine, is not wine, though it too tastes as such, but the Blood of Christ (καὶ ὁ φαίνμενος οἶνος, οὐκ οἶνος ἐστίν, εἰ καὶ ἡ γεῦσις τοῦτο βολεται, ἀλλ’ αἷμα ρι τοῦ)” (Cyr. H. *Catech.* 22.9; *MPG* 33, p. 1104).¹⁵ Along similar lines, Jerome explains that during the Last Supper, as Jesus “passed over to the true mystery of the Passover (*ad verum Pascha transgreditur sacramentum*)” he, just as Melchizedek had done in a prefiguration of him, presented himself in the truth of his own body

¹⁴ The late ancient eucharistic theologies of the period to which Wawrykow pays special attention are in the West those of Hilary, Ambrose, Augustine, Cassian and Gregory the Great and in the East those of John Chrysostom, Pseudo-Dionysius and John Damascene (Wawrykow, 2012, p. 62).

¹⁵ Cf. Cyr. H. *Catech.* 22.3; *MPG* 33, p. 1100: Ἐν τῷ ἄρτῳ, δίδοται οἱ τῶμα. καὶ ἐν τῷ οἶνῳ δίδοται οἱ τῷ αἷμα.

and blood (*in veritate sui corporis et sanguinis repraesentaret*)” (Hier. *Comm. in Matt.* 4/26.26; *MPL* 26, p. 195; Eng. trans. Scheck, 2008, p. 291).

Wawrykow further emphasizes that in the authors from this period there is also “a pronounced ecclesial dimension to the Eucharist” (Wawrykow, 2012, p. 64). This aspect is probably most persuasively elaborated by Augustine, especially in his commentary on the Gospel of John (Aug. *Trac. Ionn.* 25–27). With reference to 1 Cor. 10:17, Augustine here calls the eucharist the mystery of piety, a sign of unity and a bond of charity (*O Sacramentum pietatis! O signum unitatis! O vinculum caritatis!*) (*Trac. Ionn.* 26.13; *MPL* 35, p. 1613; *NPNF* 1.7, p. 281/172). For Augustine here, participation in the eucharist means entering into the life of the Spirit of Christ through becoming part of his body (i.e., the Church). In the same context, Augustine also tries to weaken the materialistic understanding of the effect of the eucharist, promoting a more spiritual interpretation: “The Lord gives us His flesh to eat (*Carnem suam dat nobis Dominus manducare*), and yet to understand it according to the flesh is death (*et sapere secundum carnem mors est*), while yet He says of His flesh, that therein is eternal life. Therefore, we ought not to understand the flesh carnally (*Ergo nec carnem debemus sapere secundum carnem*)” (*Trac. Ionn.* 27.1; *MPL* 35, p. 1616; *NPNF* 1.7, 285/174).

As has been stressed by J. Patout Burns, however, at this juncture Augustine’s agenda in the first place is to address the practical problems he faced in respect to the Donatist controversy, and his words are not primarily aimed at rectifying eucharistic theology in general: “By identifying the eucharistic presence as the ecclesial rather than the heavenly body of Christ, Augustine could easily demonstrate that the Donatist celebration in separation from the church was an empty shell, a sign pointing to nothing” (Burns, 2001, p. 15; see Wawrykow, 2012, p. 78). In any respect, Augustine did not aim to reject the presence of Christ in the eucharist. This is especially evident in one of his sermons, where he does not hesitate to explain that “[the Bread which you see on the altar, consecrated by the word of God, is the Body of Christ (*Panis ille quem videtis in altari sanctificatus per verbum Dei, corpus est Christi*). That chalice, or rather, what the chalice holds, consecrated by the word of God, is the Blood of Christ (*Calix ille, immo quod habet calix, sanctificatum per verbum Dei, sanguis est Christi*)” (Aug. *Ser.* 227.21; *MPL* 38: p. 1099; Eng. trans. Muldowney, 2008, p. 196).

Another important question is how these authors understood what is responsible for the eucharistic presence: how does it happen that Christ becomes present in the eucharist? In the previously mentioned sermon, Augustine offers a hint of his own understanding that the bread and chalice are sanctified by the word of God. Here Augustine is probably following the most widespread interpretation of his time. Gregory of Nyssa, an author of a different provenance,

also emphasizes that “the bread which is consecrated by the Word of God (τὸν τῷ Λόγῳ τοῦ Θεοῦ ἁγιασθέντα) is changed (μεταποιεῖται) into the Body of God the Word (εἰς ὄμα τοῦ Θεοῦ Λόγου). For that Body was once, by implication, bread, but it has been consecrated ([ἡ γὰρ θη) by the inhabitation of the Word (ἐνικηνώει τοῦ Λόγου) that is tabernacled in the flesh (ἐκηνώαντος ἐν τῇ ἀρκί)” (Gr. Nyss. *Or. catech.* 37; *MPG* 45, p. 96; *NPNF* 2.5, p. 954/504). Similarly, John Chrysostom writes, “[T]he priest standing there in the place of Christ says these words (ὁ χυμὸς ληρῶν ἔθηκεν ὁ ἱερεὺς, τὰ ῥήματα φθεγγόμενος ἐκεῖνα) but their power and grace are from God (ἡ δὲ δόναμις καὶ ἡ χάρις τοῦ Θεοῦ ἐστίν). ‘This is My Body,’ he says (Τοῦτ’ ἐστὶ τὸ ὄμα, φησί.), and these words transform what lies before him (Τοῦτο τὸ ῥήμα μεταρρυθμίζει τὰ προκείμενα)” (Jo. Chr. *Hom. in prod. Jud.* 1.6; *MPG* 49: p. 380). Probably the most elaborate explanation of the time, however, can be found in Ambrose’s treatise *De sacramentis*.

You say perhaps, “My bread is of the usual kind (*Meus panis est usitatus*).” But that bread is bread before the words of the sacraments (*ante verba sacramentorum*): when consecration has been added, from bread it becomes the flesh of Christ (*ubi accesserit consecratio, de pane fit caro Christi*). Let us therefore prove this. How can that which is bread be the body of Christ (*Quomodo potest qui panis est, corpus esse Christi*)? By consecration (*Consecratione*). But in what words and in whose language is the consecration (*Consecratio autem quibus verbis est, cujus sermonibus*)? Those of the Lord Jesus [...]. When it comes to the consecration of the venerable sacrament, the priest no longer uses his own language (*jam non suis sermonibus utitur sacerdos*), but he uses the language of Christ (*sed utitur sermonibus Christi*). Therefore, the word of Christ consecrates the sacrament (*Ergo sermo Christi hoc conficit sacramentum*) (Ambrose, *De sacr.* 4.4.14; *MPL* 16, pp. 439–440; Eng. trans. Thompson & Srawley, 1919, pp. 109–110; cf. *De Sacr.* 4.4.15).

In *De Sacr.* 4.5.21, Ambrose further introduces the words of institution, by means of which, according to him, the consecration happens. Finally, in 4.5.22, he perceives it important to emphasize: “Observe all those expressions (*Vide illa omnia*). Those words are the Evangelists’ up to *Take*, whether the body or the blood (*sive corpus, sive sanguinem*). After that they are the words of Christ; *Take, and drink you all of this; for this is my blood*. And observe them in detail (*Et vide singule*)” (Ambr. *De sacr.* 4.5.22; *MPL* 16, p. 444; trans. Thompson & Srawley, 1919, p. 119). Ambrose gives here a clear indication that the recitation of the words of institution is a key element in the success of the eucharistic ritual. In his time, with few documented exceptions, the words of institution are a standard part of almost every extant eucharistic prayer in both the East and West, as is also documented in the Church order literature (see esp. *Const. ap.* VIII.2.2 and *Trad. ap.* IV.9–10).

The Eucharist and the “Turn of Constantine”

In the fourth century, the eucharistic liturgy was still in a period of intense development: prayers were further elaborated, while additional ritual gestures were continuously implemented. Also, other aspects of the liturgy, such as lectionary reading, were objects of gradual sophistication. Despite our highly limited knowledge of those aspects, it is possible to demonstrate that, as far as our sources permit us to see, some patterns are almost universal. These patterns are on the level of popular beliefs and practices related to the eucharist, eucharistic theologies conceptualizing Christ’s presence in the eucharist, and explanations of this presence on the basis of particular prayers pronounced earlier over the bread and wine by an ordained person. The question for now is, how are all these phenomena related to each other and how far back in time they can be traced? What were the innovations of the fourth century and what was on the scene already before the tolerance of Constantine?

In one of his overview articles concerning the eucharist in early Christianity, Paul F. Bradshaw emphasizes the “turn of Constantine” as having a crucial impact on its development. A lengthy quotation will be useful:

In the changed world of the fourth century, however, when Christians ceased to be liable to occasional persecution and became instead the favoured cult of the Roman Empire, the character of their eucharistic worship also changed. Celebrated now in large public buildings, it took on the style of imperial cult ceremonial and incorporated features drawn from the pagan religions around, of which it saw itself as the true fulfilment. Fixed prayers with elevated language began to replace the simpler extempore compositions of earlier times, and these together with such things as music, processions and vesture were used to enhance the solemnity of the rite in the eyes and ears of the worshippers, who did not always seem to understand the significance of what was going on, and whose behaviour in church left much to be desired, according to the preachers of the age. The preachers also tried to exhort their congregations to amend their lives and come worthily to receive communion rather than undertake the moral reformation asked of them in order to be communicants. This increased the tendency that was already forming for the eucharist to be viewed as something done by the clergy for the people rather than, as before, an action of the whole people of God. For those who now began to receive communion only infrequently, the eucharist not only ceased to be a communal action but was not even seen as food to be eaten. Instead, it became principally an object of devotion, to be gazed on (Bradshaw, 2002, p. 173; see Bradshaw, 2004, p. 139).

Especially the last statement deserves a consideration: eucharist was not anymore a communal activity including feeding of the participants, but became “an object of devotion.”

Over the last few decades, it has been demonstrated in different domains that to approach the reign of Constantine as a turning point in the history of early Christianity is highly problematic (e.g., Cameron, 1993; Harries, 2012). Therefore, ascribing to the reign of Constantine such a role in respect to the history of the eucharist, as Bradshaw does, has to be questioned. We should not overlook the fact that at least according to several literary sources, Christians erected their own publicly visible building complexes in cities even before Constantine (cf. Porph. *Christ. frag.* 76; Jensen, 2006, p. 575), and they held influential positions in the state apparatus (cf. Eus. *Hist. eccl.* 8.1). At the beginning of the fourth century, the monarchic episcopate was a commonplace, while local public elections of bishops were a big issue already in the middle of the third century (Norton, 2007). The Church itself had been already organized into the episcopal hierarchy and had “its own powerful network of communications” (Cameron, 1993, p. 71; Harries, 2012, p. 230). Also, the institution of periodical meetings of bishops had a long tradition preceding the reign of Constantine. At least since the half of the 3rd century, regional councils in North Africa were held periodically (Louth, 2004, p. 392). This evidence of continual and gradual changes gives a different impression than the paragraph quoted from Bradshaw, who himself elsewhere—in reference to liturgical history in general—acknowledges that “[t]he so-called Constantinian revolution served as much to intensify existing trends as it did to initiate new ones” (Bradshaw, 1988, p. 6).

With all this in mind, how should we assess the impact of the “Constantinian turn” on the development of popular beliefs and practices concerning the eucharist, eucharistic theology and eucharistic ritual? Concerning these phenomena, is it more appropriate to approach the Constantinian period in terms of continuity or change? Of the above listed popular beliefs and practices, what can we trace back to the time before the reign of Constantine? What was the situation concerning the practice of taking the eucharist out of the proper liturgical context before the fourth century?

The Third Century: Popular Beliefs and Practices

Already in the third century we document several types of practices involving the eucharist elements outside of the proper context of the communal meal. First, in the case of some churches in Asia Minor, we have evidence of a practice which is to some extent similar to the above described practice of the *fermentum*; it is reported by Eusebius when he discusses the issue with the so-called Quartodecimans. Eusebius quotes from a letter of Irenaeus of Lyon

to Victor, which mentions that on Easter some presbyters of the Quartodecimans under the influence of Victor “send the eucharist to other parishes (το ς τῶν ἀρουμεῶν τηροῦν ἐν εὐχαριστίαν)” (Eus. *Hist. eccl.* 5.24.15, *SC* 41 via *TLG*; *NPNF* 2.1, p. 587/243). It seems that this practice was also referred to in the documents of the Council of Laodicea: “The holy things are not to be sent into other dioceses at the feast of Easter by way of *eulogiae*” (*Can. Lao.* 14; *NPNF* 2.14, p. 281/132).

Offering a hint about the situation in late third-century Egypt, Eusebius further quotes a letter of Dionysius of Alexandria, which reports a story of an old pious man named Sarapion, who, on his deathbed, sent his grandson for a presbyter. But because it was night and the presbyter could not come, the presbyter—in agreement with Dionysius’ norms—“gave the boy a small portion of the eucharist (βραχὺ τ ς εὐχαριστίας), telling him to soak it and let the drops fall into the old man’s mouth (οὐβρέξαι κελεῖται καὶ τῷ πατρὶ κατὰ τοῦ στόματος εἰστίναί τας)” (Eus. *Hist. eccl.* 6.44.3–5; *SC* 41 via *TLG*; *NPNF* 2.1, p. 741/290). The passage documents that already at this period the eucharist was stored by the clergy with a possibility to be used later, outside of the context of the communal meal.

In his third homily on the book of Exodus, Origen compares the practices of his audience in respect to the eucharist with their behavior concerning the Scripture. After listing how carefully his audience behaves in respect to the eucharist, he urges “[I]f you rightly take such great care for the preservation (*conservandum*) of the Lord’s Body, why do you hold it less of a sin to behave with negligence toward the Word of God than toward His Body?” (*Rel. lit. vetus.* 1:116.1146; for both Latin and English translation, see Freestone, 1917, p. 35). This passage, too, can be interpreted as evidence for the widespread eucharistic piety, including the storing of elements by the laity.

Moving to the West, in his criticism about the immoral behavior of his fellow citizens, the bishop Novatian also provides a hint about popular practices in Rome. With considerable outrage, he imagines that a man would be able “to take that which is holy into the brothel with him.” Such a man “hastens to the spectacle (*qui festinans ad spectaculum*) when dismissed from the Lord’s table (*dimissus e Dominico*), and still bearing within him, as often occurs, the eucharist (*et adhuc gerens secum, ut assolet, eucharistiam*), that unfaithful man has carried about the holy body of Christ (*Christi sanctum corpus*) among the filthy bodies of harlots (*inter corpora obscoena*)” (Nov. [Ps.-Cyp., *De spec.* 5; *MPL* 4, p. 784; *ANF* 5, p. 1408/577).

However, the most revealing information concerning the private usage of the eucharist has its origins in North Africa, namely, in the works of Tertullian and Cyprian. When Tertullian tries to persuade his audience to attend the worship of stations (*statio*, a ritual gathering on the

occasion of a fasting day), he stresses that participation in the ritual is important, not only the consumption of the eucharist at some later time: “Will not your Station be more solemn if you have withal stood at God’s altar? When the Lord’s Body has been received and reserved (*accepto corpore Domini, et reservato*) each point is secured (*utrumque salvum est*), both the participation of the sacrifice and the discharge of duty (*et participio sacrificii, et executio officii*)” (Tert. *De or.* 19; *MPL* 1, pp. 1182–1183; *ANF* 3, p. 1537/687). In *Ad uxorem*, Tertullian provides additional information about the practice of keeping the eucharist, when he takes for granted that some women married to pagan husbands have at home “a bread” which they “secretly taste before [taking any food (*secreto ante omnem cibum gustes*)” (Tert. *Ad uxor.* 2.5; *MPL* 1, p. 1296; *ANF* 4: 109/46).

Due to Cyprian’s work, we are even informed about several miracle reports associated with the eucharist. These reports, too, relate the practice of keeping the eucharist (i.e., taking the eucharistic elements from the context of the liturgy for the purposes of preserving them at home). For instance, in *De lapsis*, Cyprian mentions a woman who, “when she tried with unworthy hands to open her box, in which was the holy [Body of the Lord (*Et cum quaedam arcam suam, in qua Domini sanctum fuit, manibus indignis tentasset aperire*), was deterred by fire rising from it from daring to touch it (*igne inde surgente deterrita est ne auderet attingere*)” (Cypr. *De laps.* 26; *MPL* 4, p. 486; *ANF* 5, pp. 1035–1036/444). In the same text, we also read about a child who, in absence of its Christian mother, was polluted by consumption of an idolatrous bread mingled with wine. Because of that pollution, the child, guided “by the instinct of the divine majesty,” from that time onward resisted participation in the eucharist. When a deacon forced the child to consume a part of it, what followed was “sobbing and vomiting.” According to Cyprian, “In a profane body and mouth the eucharist could not remain (*In corpore atque ore violato eucharistia permanere non potuit*). The draught sanctified in the blood of the Lord burst forth from the polluted stomach (*Sanctificatus in Domini sanguine potus de pollutis visceribus erupit*)” (Cypr. *De laps.* 25; *MPL* 4, pp. 485–486; *ANF* 5, p. 1035/444). In all these cases, it is evident that already at the time of Cyprian the eucharist was viewed as a substance possessed of a power sufficient to produce miraculous outcomes. Moreover, the belief that the eucharist has such miraculous power was in agreement with the view maintained by such figures as Cyprian.

The Third Century: Eucharistic Theology

The texts above indicate that manipulation of elements of the eucharistic meal outside the context of the actual communal ritual was a commonplace already in the third century. Now

we can move to the issue of how authors from this period understood the way in which those meal elements become special. In the case of the fourth century, I listed the most representative passages concerning the belief in the presence of Christ in the eucharist. In the case of the earlier sources, however, the issue is more complicated. Interpreting the literary sources from this earlier period, the question arises of how to differentiate the propositions reflecting actual beliefs in the presence of Christ in the eucharist from the claims containing a purely metaphorical association between the bread and Jesus' body and wine (or cup) and Jesus' blood? Without a doubt, this metaphorical association has been available since the formative phase of Christianity, namely from the time of Paul (see 1 Cor. 10:16–17 and 11:17–34 discussed in Chapter 5). From the second century onward (as discussed in Chapter 4 with reference to Ign. *Smyr.* 7; Ign. *Phil.* 4; Just. *1 Apol.* 66,2–4), however, the former metaphorical language associating bread and Jesus' body and wine (or cup) and Jesus' blood started to be used restrictively as an identity statement promoting an adequate approach to the ritually transformed bread and wine.

But how did the third-century authors understand the cause of the power entering into the eucharist? In the case of Ambrose and other fourth-century sources, we saw that it was viewed as achieved by the celebrant's repetition of the words pronounced by Jesus during the Last Supper. What can we learn from Tertullian's interpretation of Jesus and the Last Supper in that respect? Tertullian assumes that "having taken the bread and given it to His disciples, He made it His own body (*corpus suum illum fecit*) by saying, 'This is my body (*Hoc est corpus meum dicendo*),' that is, the figure of my body (*id est, figura corporis mei*)" (Tert. *Adv. Marc.* 4.40; *MPL* 2, p. 460; *ANF* 3, p. 915/418 (cf. also Tert. *Adv. Marc.* 3.19; *MPL* 2, p. 348; *ANF* 3, p. 733/337)). However, he does not associate it directly with the actual practices of his time.

Cyprian goes much further here. In his arguments against the use of water instead of wine in the eucharistic context, he stresses that "in offering the cup (*in calice oferendo*), the tradition of the Lord must be observed (*Dominica tradition servetur*)" (Cypr. *Ep.* 63.2; *MPL* 4, p. 374; *ANF* 5, p. 870/359; cf. Cypr. *Ep.* 63.10). Although Cyprian's main focus is on the use of wine (instead of water), it is evident that he, too, assumes some kind of recitation of the words of Jesus in the eucharistic context. According to him, "certainly that priest truly discharges the office of Christ (*utique ille sacerdos vice Christi vere fungitur*), who imitates that which Christ did (*quod Christus fecit imitator*), and he then offers a true and full sacrifice in the Church to God the Father (*sacrificium verum et plenum tune offert in Ecclesia Deo Patri*) when he proceeds to offer it according to what he sees Christ Himself to have offered (*si sic incipiat offerre secundum quod ipsum Christum videat obtulisse*)" (Cypr. *Ep.* 63.14; *MPL* 4, p.

386; *ANF* 5, p. 877/363). From an analytical standpoint, Cyprian here assumes that the success of the ritual is guaranteed at least by three conditions: there is a priest representing the role of Jesus, the elements are the same as the ones used by Jesus, and, finally, the ritual procedure imitates what Jesus did during the Last Supper.

The three conditions assumed by Cyprian, which are commonly present in later texts, are not clearly identifiable in the sources from the second century. The *Didache*, to which Cyprian himself makes an indirect allusion in the letter (cf. *Did.* 9.4; *Cypr. Ep.* 63.13), does not assume any of these conditions. Justin Martyr, in turn, suggests a clear analogy between the practice and Jesus' Last Supper (*Just. 1 Apol.* 66), but does not describe this association in terms of imitation. Finally, Ignatius of Antioch, who is otherwise very certain about the eucharistic presence of Jesus in the eucharist (*Ign. Eph.* 20) and who presupposes a bishop to preside over it (*Ign. Smyr.* 8.1), does not explicitly associate the role of the bishop here with the role of Jesus during the Last Supper.

To sum up these last two sections on the sources from the third century, the evidence for popular beliefs and practices concerning the eucharist from this period reveals substantial similarities with the evidence regarding this phenomenon from the fourth century. For this reason, it is ungrounded to explain the spread of popular beliefs and practices concerning the eucharist by reference to the changes associated with the turn of Constantine and to the elaborated eucharistic theology characterizing the later period only. On the other hand, the theology of eucharistic presence and the reasoning around what causes this presence were elaborated considerably less during the course of the third-century. Thus, it appears that the popularity of these beliefs and practices has to be explained by reference to other factors.

Explanation: Evaluating Internal and External Factors

Drawing on the framework introduced in the first chapter, I argue that the emergence and spread of popular beliefs and practices concerning the eucharist were first enabled by the increasing ritualization of early Christian meal practices, especially during the first two centuries, and further intensified by external factors that Christian communities faced in the third century. Analytically speaking, what I have described above as popular beliefs and practices concerning the eucharist reveals features of psychological phenomena known in the literature as magical thinking and superstitious behavior (see Chapter 1 or any of the following monographs: Hood, 2009; Hutson, 2012; Subbotsky, 2010; Vyse, 2013). Such beliefs and behavior typically involve manipulation of objects like fetishes, which are believed to be

possessed of an inner essence that gives them supernatural power. I argue that the manipulation of the eucharistic elements outside of the context of the proper meal, which I documented in the sources from the third century onward, represents historically widespread instances of behavior reflecting these types of phenomena. I call this *eucharistic magic*, which I define here as the belief, typically coupled with behavior, that the eucharistic food elements are equipped by an inner essence, giving them a power to produce supernatural effects, especially for those who consume them, but also for those who otherwise come in contact with them. In this case, the emergence of eucharistic magic can be explained by reference to the object-transforming nature of early Christian eucharistic blessing.

As I will show in detail in the following chapter, the development of early Christian meal practices during the first two centuries of Christian history is marked by increasing ritualization of the meals in the sense suggested in the first chapter. During this time, Christians were abandoning the patterns associated with the standardized Greco-Roman banquet to perform their own symbolic meals, disconnected from the ordinary function of feeding the participants (goal-demotion). The whole event was marked by increasing rigidity, but this was especially true of the prayers, which were now pronounced only by persons with special religious status (i.e., bishops, priests and prophets). In other words, through certain developmental steps, the early Christian meals assumed a form that made them more and more appropriately designed to be associated with supernatural results. As the central activity of the ritual revolved around the food elements, it is also in this context that the emergence of those beliefs should be expected. In that sense, the ritual was becoming more and more centered on the transformation of the blessed bread and wine, which were considered as acquiring a supernatural quality, conceptualized here in terms of the presence of Jesus, namely, his body and blood. Thus, in terms of what was introduced in Chapter 1, there was emerging a balanced state between actual practice and the beliefs associated with it, comprising the overall cognitive attraction of the practice-belief package.

However, the increasing ritualization of early Christian meals appears to be only a part of the story. It should be further supplemented by a consideration of the possible role of other driving forces, which can be described as external factors. I dedicate the rest of this chapter to consider their role in the given context.

Worth closer examination is the fact that there are both theoretical and empirical indications suggesting that magic, superstition and ritualization blossom especially under conditions of perceived threat or uncertainty, which produce stress and anxiety. Thus, the environment associated with the phenomenon known as the “Crisis of the Third Century” could

have led to the emergence of these emotional responses among contemporaries then. Could it also somehow have contributed to the increasing popularity of eucharistic magic in this period?

The phenomenon known as the “Crisis of the Third Century” is well known and widely studied by historians of the Roman Empire (Alföldy, 2011; Ando, 2012). However, until recently (Ambasciano, 2016; Harper, 2015), it has not often been explored by historians of religion. The sources reveal the period as marked by political and economic instability supplemented by a certain extent of demographic contraction. In recent years, with progress in the scientific study of historical epidemics, a lot of attention has been paid to the role of the so-called “Antonine Plague” in that process (Bagnall, 2002; Bruun, 2007; Frith & Frith, 1999; Scheidel, 2002, 2010), while the so-called “Plague of Cyprian” was generally outside of the interest of those studies (for an exception, see Harper, 2015). Most recently, the traditional historical research on this critical period has been enriched by an application of quantitative methods. For instance, drawing on evidence from the Epigraphic Database Heidelberg, Andrew Wilson was able to show a significant decrease in the production of building inscriptions starting at the turn of the third century (Wilson, 2012, Fig. 7.1). On a more general level, Michael McCormick and his colleagues (McCormick et al., 2012) analyzed a number of climatological proxies and found, for instance, that before 155 CE the Romans saw more heavy flooding on the Nile and therefore better food production than in the period from 156 to 299 CE. This correlates well with the decrease in average annual temperature in the Northern Hemisphere in that period, reflected both in dendroclimatological and glacial data. One possible explanation for this trend can be the documented higher level of volcanic activity in that period, which could have had an impact on the atmosphere (Brooke, 2014; McCormick et al., 2012). A combination of the evidence extracted from literary documents with recent quantitative data moves the discussion about implications of the crisis to more solid ground. Political and economic instability, warfare and epidemics, which were also accompanied by higher mortality, causing demographic contraction, were at least partly driven also by external environmental forces. Taken together, all these factors contributed to perceptions of the uncertainty of life, environmental uncontrollability and, in short, an experience of stress and anxiety. With that in mind, we can consider the possible implications of this situation for the history of eucharistic magic.

In the opening chapter on ritual theory, I discussed the body of research on the links between ritual, magic and superstition on the one hand and the experience of stress or uncertainty on the other. This was mainly experimental research dealing with that issue on the level of the individual. Yet, another group of studies goes even further in asking whether the

link between superstition/ritual/magic and anxiety/stress/uncertainty can also be identified on the level of the general population and explained by temporally restricted stressful situations faced by individuals. Can a greater inclination to superstitious beliefs and practices be driven by a generally present environmental threat? To explore this question, Vernon Padgett and Dale Jorgenson collected popular articles on superstitious beliefs which were published in Germany from 1918 to 1940. Then, they compared the number of articles from individual years with factors assumed to be responsible for a higher level of stress in the German population of that time (levels of real wages, unemployment and industrial production). A simple correlation revealed that magical topics were more popular in periods when the German society felt endangered by such threats (Padgett & Jorgenson, 1982). Following this type of inquiry, Giora Keinan conducted a more controlled study, in which he questioned 174 Israeli citizens during the Gulf War on their superstitious practices. As expected, the results revealed a higher level of superstition among those participants who lived in areas more endangered by the war conflict than in areas which were relatively at peace (Keinan, 1994, 2002; see Sosis, 2007).

Taken together, the research suggests that magic flourishes especially in the context of potential threat. What is even more remarkable, this effect is documented to be driven not only by an individual situational context (e.g., fishing on an open sea), but also by more general factors perceived by the entire society over a longer period of time (e.g., warfare). Based on this evidence, it appears to be justified to expect that these factors could also have had certain implications for the development of early Christian ritual meal practices or for early Christianity in general. Accordingly, we can now hypothesize that under the stressful conditions of the third century (marked by high mortality, etc.), Christians were more prone to subscribe to beliefs and practices reflecting features of magic and superstition. After these beliefs and practices became more widespread and acceptable, it is possible that they further contributed to the development of the normative eucharistic theology and liturgy.

To express an even bolder hypothesis based on this theoretical framework, we can consider the possibility that eucharistic magic also contained an element that helped make Christianity more attractive in the Roman religious market (see Beck, 2006, however, for pitfalls involved with the market analogy). As contributing factors in the final historical success of the Christian Church, scholars have suggested such phenomena as the Christian belief in the afterlife or Christians' unprecedented prosocial behavior, even toward strangers (see Stark, 1997, ch. 4).¹⁶ However, I would argue that the magical practices and beliefs around the

¹⁶ Not by coincidence, this book is especially popular among advocates of the so-called cultural evolutionary account of prosocial religions (see Henrich, 2009, pp. 252, 253, 257; Norenzayan et al., 2016, pp. 12, 47).

eucharist may have played a role here as well, by making the early Christian ritual system more attractive for individuals and boosting individual well-being, even though it did not necessarily contribute to the social fitness of early Christian groups. This hypothesis challenges some recent trends shared both by the social sciences and the cognitive study of religion, which see the primary importance of rituals on the level of their social functions (as discussed in Chapters 1 and 5; see Legare & Watson-Jones, 2015; Norenzayan, 2016; Norenzayan et al., 2016; Rossano, 2012, 2015; Watson-Jones & Legare, 2016).

Conclusion

In my opening overview of the available sources, I demonstrated that the evidence enables us to trace the origins of popular beliefs and practices concerning the eucharist back to the early third century at least. In light of this, it becomes clear that the emergence and spread of these beliefs and practices well precedes the historical changes in the functioning of the Church associated with the reign of Emperor Constantine in the early decades of the fourth century. While these changes may have considerably escalated the development of early Christian eucharistic theology and liturgy, they cannot explain what was already on the scene: different forms of popular beliefs and practices concerning the eucharist, involving manipulation of the eucharistic elements outside of the context of the proper meal.

In the second part of the chapter, I suggested that these beliefs and practices reveal features of what is commonly described in psychological and anthropological literature as magical thinking and superstitious behavior. With reference to this, I called these beliefs and practices “eucharistic magic.” Drawing on recent cognitive ritual theories, I argued that the emergence of eucharistic magic could be suitably explained in terms of strengthening beliefs in ritual efficacy associated with increasingly ritualized forms of eucharistic ritual evolving over the first two centuries.

The latter part of my argument noted that magical and superstitious beliefs and practices flourish especially under conditions of perceived stress and anxiety. The situation of the Roman Empire from the late second century until the end of the third century most likely produced these conditions. Among the adherents of Christianity, the situation could quite naturally have

However, we should be aware that what Stark presents as an explanation of the success of Christianity is not generally accepted by scholars in the area of ancient religions (Beck, 2006; Bremmer, 2010). The findings presented in this thesis further challenge its reliability. Therefore, to use Stark’s theory-dependent explanation of early Christianity to support the cultural evolutionary account of prosocial religions is problematic.

led to the emergence and spread of magical practices of any kind, including those involving the eucharistic meal elements. In turn, this “lived religion” side of ancient Christianity could have made it more attractive for new adherents. This can also provide a partial answer as to why the Christians appeared at the dawn of the fourth century to be a much more sizable and visible social movement than any other.

CHAPTER 4: RITUALIZATION OF EARLY CHRISTIAN MEALS OVER THE FIRST TWO CENTURIES¹⁷

Introduction and Preliminary Remarks

Meals play a central role in the social life of any society (Fox, 2003; Han, 2004) and the world of the ancient Mediterranean is no exception in this respect, as is broadly documented by both archaeological and literary material (Donahue, 2015; Dunbabin, 2003). In this chapter, I discuss how early Christian meals, as part of this cultural environment, became increasingly ritualized over time, sometimes even losing their primary function of feeding the participants. For the purpose of the analysis, the social functions of these meals, often discussed in recent scholarship (e.g., Smith, 2003; Taussig, 2009) will be bracketed here.

A comparative analysis of early Christian meal practices should consider on the one hand the evidence for meals occurring in associations and on the other the role of food and meals in early Judaism (Marks & Taussig, 2014). Recently, it has been argued that these two clusters of material should be seen as parts of the same cultural environment, rather than as two independent or even mutually exclusive sources of inspiration for the study of early Christian meals (in particular, see Smith, 2003). Instead of trying to decide which elements of early Christian meals are rooted in the Jewish environment and which are anchored in a broader Greco-Roman cultural context, we thus need to understand that in designing their meals, the ancient Mediterranean adherents of the cult of Christ were drawing on the same cultural values and constrained by the same cultural norms of the Greco-Roman world as their peers who were devoted to Judaism or other Greco-Roman religions.

Such an understanding was not always the case in older scholarship. First of all, it was quite common to approach the tradition of the Last Supper as born out of the Jewish Passover meal tradition (e.g., Jeremias, 1949). However, we have almost no evidence for actual Jewish meal practices in Palestine during this period. Furthermore, even if we did have such evidence, there is no reason to expect that such practices followed a generally widespread pattern (Marcus, 2013). From what scanty evidence is available, it appears that Judaic festive meals in

¹⁷ A slightly modified version of this chapter has been published as Kaše, 2018.

Palestine were greatly influenced by Greco-Roman norms (Kraemer, 2010, pp. 413–418). Therefore, it does not make sense to argue that the background of Jesus' Last Supper is in the Judaic tradition of the Passover meal and, consequently, that this was the source upon which Jesus' followers modeled their communal meals known as the eucharist. It seems more appropriate to describe both Judaic and Christian meals as part of a social practice that drew on the same cultural sources (Marcus, 2013).

Another issue concerns a certain trend toward creating a typology of early Christian meals. Older scholarship tended to assume that there were two main types of early Christian meals (e.g., Lietzmann, 1926): one anchored in Jesus' Last Supper, which focused on remembering his death and was later called the "Eucharist," and another rooted in Jesus' ordinary meals during his lifetime, later celebrated under the heading of "breaking of the bread" or "*agape*." According to this view, the first form took on a predominantly symbolic meaning and ceased to be seen as a proper meal during the first couple of centuries; the second, in contrast, continued to maintain the form of a dinner and was still regarded by Christians as involving connotations of a common banquet (Tert. *Apol.* 39). Recent scholarship, however, has shown this dichotomy to be groundless (McGowan, 1997). We now know that different Christian communities called their meal gatherings by different names, and that at least some communities gathered for more than one type of meal. In this chapter, I therefore discuss meals in a broad sense, covering all forms of eating in Christian gatherings.

Bridging Gaps by Means of Ritual Theory

To warn readers about the scarcity of evidence concerning the earliest Christian liturgy, Colin Buchanan compares our situation to someone who is trying to learn about Africa by looking out of the window while flying over the continent. Through the gaps in the clouds, he will gain "a hasty glimpse of water on two occasions, of a snowcapped mountain on one, of a desert on one, of a city on one, and of an extensive ostrich farm on one" (Buchanan, 2007b, p. 153; Buchanan, 2007a, p. 8). Buchanan asks, what can we learn about Africa this way? Certainly not much. By analogy, we need to understand that as historians we are in a similar situation: our knowledge of the early Christians' ritual meals is based on only a few relevant historical sources.

Realizing this situation, should we give up entirely on the search for patterns or developmental trajectories in early Christian ritual history? I do not believe that this is the right solution. Instead, drawing on recent advances in the behavioral, cognitive and social sciences, in this chapter I seek to demonstrate that even though we cannot actually observe early

Christians celebrating their ritual meals (in that respect historians can envy ethnographers), we can make certain assumptions as to what could and could not have been the case, or what is more and less likely. In that way, we can “bridge the gaps,” forming at least some “educated guesses” as to what might lie beneath the clouds. For that task, especially the cognitive theories of ritual represent a fresh alternative to a majority of the current anthropological theories, providing explanatory models of ritual informed by recent advances in the study of the human mind.

As we could see in the first chapter, in the research program of the cognitive science of religion, ritualization is understood as a semi-automatic process, whereby an ordinary activity is modified into a ritualized behavior characterized by *compulsion* (one must perform a particular sequence), *rigidity* (it must be performed the right way), *redundancy* (the same actions are often repeated in the ritual) and *goal-demotion* (the actions are divorced from their usual goal) (Liénard & Boyer, 2006, p. 815). Such a process involves a crucial psychological component: the ritualized behavior is driven by particular innate and evolutionary evolved psychological mechanisms which are responsible for the fact that ritualization occurs more often during specific life stages (e.g., pregnancy) and that some types of activities (e.g., cleansing) are more often ritualized than others. The preparation and consumption of food are also included among activities that are highly prone to ritualization. Thus, psychologically driven ritualization can at least partly affect culturally shared collective rituals, such as family or communal meals. In the light of these theoretical insights, we can now ask whether any such aspects of ritualization occur in our first- and second-century Christian sources.

Last Supper Accounts

Any account of the development of Christian meal practices has to begin with our earliest explicit evidence: Paul’s 1 Corinthians 11:17–34. In this section, Paul is seeking to rectify the meal-related behavior of the Christians of Corinth, among whom divisions (*χίματα*) had emerged in this respect. At these gatherings, “each one goes ahead with his own meal. One goes hungry, another gets drunk” (11:21, English text according to *ESV* translation; Greek text based on *NA28*). Considering such behavior inappropriate for the congregation of God (ἐκκλησία τοῦ θεοῦ, 11:22), Paul reminds the Corinthians of the tradition concerning the last meal of Jesus:

(11:23b) [T he Lord Jesus on the night when he was betrayed took bread (ἔλαβεν ἄρτον), (24) and when he had given thanks, he broke it, and said (εὐχαρι τή ας ἔκλα εν κα εἶ εν), “This is my body which is for you. Do this in remembrance of me.” (25) In the same way (ὡ α τως) also he took the cup, after supper, saying (κα τ οτήριον μετ τ δει ν αι λέγων), “This cup is the new covenant in my blood. Do this, as often as you drink it, in remembrance of me.” (26) For as often as you eat this bread and drink the cup, you proclaim the Lord’s death until he comes. (27) Whoever, therefore, eats the bread or drinks the cup of the Lord in an unworthy manner will be guilty concerning the body and blood of the Lord.

Much ink has been spilled comparing the wording of the sentences ascribed here to Jesus and those found in the Synoptic Gospels (Bradshaw, 2004, pp. 3–15). Rather than entering into this debate, I focus on the description of Jesus’ actual actions in these accounts and on what we can learn from them about the ritualization of early Christian meal practices. In the following chapter, I will go deeper, considering the scholarly debate concerning the language Paul adopts here.

First of all, in Paul we find a pattern in which Jesus first *takes bread*, then *breaks it* while *giving thanks*, and finally says the so-called *words of institution* (i.e., “This is my body...”). What is remarkable, the words of institution are here reported as being said *after* the thanksgiving and breaking of bread, not as part of it. The same is also the case in Luke, whose version is closely related to that of Paul in a number of respects (see McGowan, 2014, p. 28; Bradshaw, 2004, pp. 3–5):

And he took bread, and when he had given thanks, he broke it (κα λαβὼν ἄρτον εὐχαρι τή ας ἔκλα εν) and gave it to them, saying (κα ἔδωκεν αὐτο ς λέγων)... (Luke 22:19).

Analogously, the Greek text in particular reveals a structural similarity between Mark and Matthew (Mark 14:22: λαβὼν ἄρτον εὐλογή ας ἔκλα εν κα ἔδωκεν αὐτο ς κα εἶ εν (“he took bread, and after blessing it broke it and gave it to them, and said”); Matt. 26:26: λαβὼν ὁ Ἰη οὺς ἄρτον κα εὐλογή ας ἔκλα εν κα δοὺς το ς μαθητα ς εἶ εν (“Jesus took bread, and after blessing it broke it and gave it to the disciples, and said”)). Compared to Paul and Luke, there is one specific difference in the words used: rather than referring to giving thanks, the writer uses the active participle of the verb εὐλογέω (‘to bless’). Nevertheless, when these two accounts follow up with the cup, they consistently speak of *giving thanks* (Mark 14:23: λαβὼν οτήριον (“took the cup”) εὐχαρι τή ας (“gave thanks”) ἔδωκεν αὐτο ς (“gave to them”); Matt. 26:27: λαβὼν οτήριον (“took the cup”) κα εὐχαρι τή ας (“and gave thanks”) ἔδωκεν αὐτο ς λέγων (“gave to them saying”)). As we shall see below, this variation (εὐχαρι τέω vs. εὐλογέω) is probably due to the fact that the two families of accounts reflect a vocabulary used by communities occupying different cultural settings.

What do we learn from these narratives about the ritualization of early Christian meals? We have seen that in all these accounts Jesus' behavior is described as following a general pattern: (1) he takes the bread (and cup), (2) he gives thanks (pronounces a prayer), (3) he breaks the bread, and (4) he gives pieces of it to his disciples. A similar observation by Gregory Dix led to his famous study *The Shape of the Liturgy* (Dix, 1945). In terms of our present objectives, however, what is most remarkable in the above observations is the intimate linkage between the giving of thanks and the breaking of bread: something like a stable formula seems to be found in all accounts, linking the two steps into a single and rigid procedure. In view of this, Jesus' action here can be described as being partly ritualized in the above-mentioned specific sense. We may ask, however, how unique is this pattern compared to other meal settings in the New Testament?

Feeding of the Multitudes

I have already suggested that it is illusory to see the beginnings of the eucharist simply as springing out of the Last Supper tradition: “‘Last Supper’ itself implies a whole series of previous suppers” (McGowan, 2014, p. 20; see Bradshaw, 2004, p. 2). Indeed, we should realize that many other situations from Jesus' career are likewise situated in a meal setting. In that respect, the stories of the miraculous feeding of the multitude occupy a central place.

Some version of the feeding miracle is included in all four Gospels. Mark, followed by Matthew, actually offers two different versions of it (Matt. 14:13–21, 15:32–16:10; Mark 6:31–44, 8:1–9; Luke 9:10–17; John 6:5–15). For the purpose of our analysis, one important detail is what Jesus does with the loaves of bread and the fishes before he distributes them to the people, assisted by the disciples. In describing the feeding of the five thousand, Mark and Matthew use almost identical wording:

And taking the five loaves and the two fishes he looked up to heaven (ναβλέψας εἰς τὴν οὐρανὴν) and said a blessing and broke the loaves (εὐλόγησεν καὶ κατέκλασεν τοὺς ἄρτους/κλάσας) and gave them to the disciples (καὶ ἐδίδου τοῖς μαθηταῖς/ἔδωκεν τοῖς μαθηταῖς τοὺς ἄρτους)... (Mark 6:41/Matt 14:19)

A very similar wording is used in a version of the same story preserved in Luke 9:16. In the case of feeding of the four thousand—reported only by Mark and Matthew—we find a slightly different pattern:

And he took (λαβὼν/ἔλαβεν) the seven loaves (and the fish), and having given thanks, he broke them (εὐχαρι τή ας ἔκλα εν) and gave them to his disciples (κα ἔδιδου το ς μαθητα ς αὐτοῦ). (Mark 8:6/Matt. 15:36)

It seems plausible that the two stories actually reflect two layers of the same tradition, based on one idealized event. In all these accounts we can identify something that looks like a rigid formula, very similar to the one we witnessed in the context of the Last Supper narratives. In the first set of accounts we find the *taking of the food*, *looking up to heaven*, the *blessing and breaking of the food*, and its *distribution*. In the second, the *blessing* is replaced by *thanksgiving* (i.e., εὐχαρι τέω rather than εὐλογέω), and *looking up to heaven* is completely omitted (both are also the case in the version offered by John 6:11).

As in the case of the Last Supper accounts, different versions prefer different terms for the prayer: εὐχαρι τέω vs. εὐλογέω. A majority of scholars have considered these two terms to be close to synonymous, being based on two different translations of the same Hebrew original: *brk*. During the first decades of the death of Jesus, however, at least some communities apparently started to prefer the term εὐχαρι τέω for prayers over the food (see Sandt & Flusser, 2002, pp. 318–25; Burkhart, 1994, pp. 55–56). According to this view, what we are witnessing in our sources are two layers reflecting this development, with an anachronistic projection of this terminology onto the life of Jesus.

Breaking of the Bread

Regardless of the differences, one important aspect is shared by all the above passages referring to a miraculous feeding: the connection between the prayer and the breaking of the bread. This connection is further deepened by other meal stories reported by the author of the Gospel of Luke and the Book of Acts. It is worth noting that the verb κλάω (‘to break’) is associated in the New Testament exclusively with bread. We have already seen that Paul uses the term in the context of the Lord’s Supper in 1 Corinthians (10:16 and 11:24) and that in Mark it occurs in the feeding of the four thousand and the Last Supper (8:6, 8:19, 14:22). It is also used very similarly by Matthew (14:19, 15:36, 26:26). Mark and Matthew further share the collocation εὐχαρι τή ας ἔκλα εν. In Luke, it is present consistently from the Last Supper context (22:19, 24:30) onward; toward the end of the Gospel, and especially in Acts, it seems to be used almost as a technical term (Acts 2:46, 20:7, 20:11, 27:35).

Toward the end of the Gospel of Luke, the author uses the term “breaking of the bread” as the name for an activity enabling recognition of the resurrected Jesus by the two disciples at Emmaus (Luke 24:30–31; specifically 24:35: “how he let them to be recognized by the breaking

of the bread [ἐν τῇ κλάσει τοῦ ἄρτου]). In the Book of Acts, this nomenclature is further used in two places. The first is in reference to an activity constituting the life of the earliest Church in Jerusalem (2:42). In the second occurrence, it is named as an activity shaping Paul's meeting with the Christian congregation at Troas on the first day of the week; this is continued by Paul's long speech until midnight in an upper room and by the resurrection of Eutychus, who falls out of the window (20:7–12). In addition to this, and in a form highly reminiscent of the feeding stories, the breaking of bread also follows Paul's prayer of thanksgiving to God on a sinking ship with 276 men aboard (Acts 27:35): "...he took bread, and giving thanks to God in the presence of all he broke it and began to eat (λαβὼν ἄρτον εὐχαρίστησεν ἐν τῷ θεῷ ἐνώπιον πάντων καὶ κλάσας ἤρξατο ἐσθίειν)."

Ritualization of Meals and the Words of Prayer

In the passages discussed so far, we identified several cues of ritualization in the meals of Jesus and his earliest followers. Since most of these sources are retrospective narratives, and thereby highly prone to idealization, they should be regarded with some reservation. There is, however, one exception in this respect which holds particular value for us: Paul's 1 Corinthians, dealing with the real life of some Christians during the '50s of the first century.

I have already stressed that in 1 Cor. 11:17–34, and indeed in all of the New Testament Last Supper accounts, there is a clear distinction between the breaking of bread and thanksgiving on the one hand and the words of institution on the other. As will be shown in the next chapter, contrary to older New Testament scholarship, which assumed that the words of institution in 1 Cor. 11 derive from liturgical usage (e.g., Theissen, 1982; Murphy-O'Connor, 1976), there has been a growing conviction in recent decades that the narratives were not used in this way for a long time, at least until the fourth century. Even then, they appear to be innovations in eucharistic prayers rather than the continuation of an ancient tradition (Bradshaw, 2004, p. 11; see also McGowan, 1999, p. 79; Stowers, 2011, p. 136). Thus, we should ask: if not the words of institution, what was the actual content of the earliest Christian prayers sanctifying their food and drink?

There is a long-standing debate concerning the extent to which these prayers were modeled upon contemporary Jewish practices and how much of their content was specifically Christian (Leonhard, 2007; Rouwhorst, 2007). In tracing the origins of the Jewish table blessing, reference is often made to the *Book of Jubilees* 22.6–9, which contains a prayer ascribed to Abraham; some scholars identify a tripartite structure in it, marking later sources (Sandt & Flusser, 2002, p. 318). It might well reflect a Jewish table prayer from the period

around 100 BC (see Burkhart, 1994, p. 53). Substantial attention has also been paid to the tradition of blessing after the meal (*birkat hamazon*). However, even if we could prove that a form of this prayer existed already before the *Mishnah*, it has been convincingly shown that its actual wording comes from a much later period (Sandt & Flusser, 2002, p. 313). Following the recent scholarly trend of situating the various aspects of Judaic meals in a broader Greco-Roman setting (Brumberg-Kraus, Marks, & Rosenblum, 2014), one scholar has even argued that to a certain extent the tradition of blessing after the meal can be interpreted as a Jewish reaction to the Greco-Roman habit of libation, occurring between the dinner and the drinking party, rather than as a practice rooted in Judaism before the Fall of the Temple (Marks, 2014).

With such inconclusive evidence concerning contemporary Jewish practices, what do we actually know about the content and form of early Christian prayers over food? Here a special position is occupied by two passages from the *Didache*, a document written down between the end of the first century and the beginning of the second, probably in Syria (Jefford, 2013). First of all, it is noteworthy that this is our earliest evidence of the term *eucharistia* in a technical sense as referring both to the meal-related prayer (9.1 and 10.1) and to the food which is being blessed (9.5). It is also the only early text which explicitly and strictly prescribes the actual words to be recited over the bread and wine in a prayer both before and after the meal. What follows is a selection from these passages, with special attention to the content of the first part (trans. Jefford, 2013, pp. 35–36; Greek text acc. to *TLG*):

9.1: And regarding the eucharist (ἐρ δὲ τ ζ εὐχαρι τίας), give thanks like this (οὕτως εὐχαρι τή ατε): 9.2: First, regarding the cup: We thank you, our Father, for the holy vine your child (αιδ ζ) David (...)

9.3: And regarding the broken bread (κλά ματος): We thank you, our Father, for life and knowledge (γνώ εως), which you made known to us through your child (αιδ ζ) Jesus — yours is the glory forever.

9.4: Just as this broken bread (κλά μα) was scattered over the hills and, coming together, became one, may your community (ἐκκλη ια) likewise come together from the ends of the earth into your kingdom—for yours are the power and the glory through Jesus Christ forever.

10.1: And after being filled, give thanks as follows (οὕτως εὐχαρι τή ατε). (...)

Overall, these prayers do not involve any reference to Jesus's death as a messianic event; nor do they refer to the Last Supper or give any indication of a symbolic connection between the bread and wine and Jesus' body and blood. This "absence" has led to endless controversy. Many scholars have even doubted that the prayers can be seen as eucharistic in the proper sense of the word (e.g., Rordorf 1997, p. 229). However, it seems that any distinction between the

eucharist proper and an ordinary communal meal goes against the text as it stands (e.g., Wengst 1984, pp. 45–46).

Even if the prayers do not reflect the actual practices of a community and are in fact the creation of a solitary innovator, the later reception of some of their parts (esp. 9.4) reveals the widespread popularity of the text (Serap. *Euch.* 1; *De Virg.* 12–13; *Const. ap.* 7.25; Cypr. *Ep.* 63.13). These allusions, however, are literary rather than liturgical, and they have been significantly modified in their wording (for a detailed comparison, see Bradshaw, 2004, pp. 116–121). It thus appears that despite the popularity of their content, the aspiration of the *Didache* to prescribe what was actually to be said in these prayers was a failure.

Putting aside the sole exception of the *Didache*, we must wait more than a century before we arrive at other sources containing something that looks like a prescription for a fixed eucharistic prayer. It thus seems that the ritualization of the words over bread and wine was a much slower process than might appear without a critical evaluation of the available sources. It is also intriguing that the exceptionality of the *Didache* with respect to the fixation of the prayers is partly counterbalanced by the fact that the ritual prescription concerns only those meal gatherings where no prophet is present. If the contrary is true, it is advised to “allow the prophets to give thanks as they wish (εὐχαριτεῖν ὃ αὐτοὶ θέλουσιν).” This brings us to the issue of ritual specialists.

Ritualization of Meals and the Role of Ritual Specialists

The freedom offered to the prophets corresponds nicely to a remark in Justin Martyr’s *1 Apol.* 65–67, a passage which is considered to be the most comprehensive account of early Christian liturgy from the first two centuries (Buchanan 2007a, p. 5). The passage refers to a person called *ποιεῖ τὴν εὐχαριστίαν* presiding over the eucharistic celebration, who, Justin reports, pronounces the prayer “according to his ability (ὅτι ὁ καθ’ ἑαυτοῦ)” (Just. *1 Apol.* 67.5; *ANF* 1, p. 186/496). From the perspective of ritual theory, this point deserves special attention: The ritual here is shaped by *who* is performing it (the presiding person) rather than *what* he or she is doing (i.e., reciting the words of prayer).

According to the cognitive scholars of religion Robert N. McCauley and E. Thomas Lawson (2002), one crucial issue for an intuitive judgment of any ritual by those who observe it or participate in it (i.e., whether or not they perceive it as efficacious) is whether a religious specialist is involved in it and, if so, in what way. One kind of ritual, which these scholars

classify as a *special agent ritual*, is characterized by the fact that the main act constituting it is performed by a clearly identifiable individual who is perceived as possessing special religious power or authority. A good example is the modern Roman Catholic priest and his role during the eucharistic ritual. The right to celebrate the eucharist is given to him in the act of ordination by a bishop, which significantly changes his status among his co-religionists. From the moment he is ordained, he has the right to conduct ritual acts restricted to persons holding the same status. If he was not ordained correctly, his activity in the role of a priest is questionable. In other words, the main factor determining whether the ritual of the eucharist will or will not be efficacious is whether it is celebrated by an appropriately ordained priest or by someone else. The crucial point emerging from Lawson and McCauley's theory is that one's capacity to judge the efficacy of a ritual is not merely based on one's knowledge of Christianity, but it is significantly influenced by our innate psychology.

This theory leads us to take a closer look at the role of ritual specialists in the earliest Christian sources. In 1 Cor. 10:16, Paul is discussing the appropriate understanding of "the cup of blessing which we bless" and "the bread which we break." Paul's use of the plural form of the verbs (εὐλογοῦμεν and κλῶμεν) suggests a question: whom are we to see as responsible for the blessing? Is Paul referring to an individual with a special charismatic gift or office, or, for instance, to the *paterfamilias* of the house where the Corinthian community is meeting? Almost the same question can be asked in respect to *Didache* 9.1 and 10.1, where we likewise find the plural. Here again, the *paterfamilias* would be a natural candidate to fill this role, at least on an occasion when no prophet is present (cf. *Did.* 10.7, discussed above). Justin specifies the praying person by means of the puzzling title ποε τῷς, which seems to refer to a function connected to the Church, to say the least. It is uncertain, however, whether such a person is to be considered a ritual specialist in the strict sense of the term.

In Ignatius of Antioch, we encounter a completely different story. As if confirming the basic hypothesis of Lawson and McCauley's theory, Ignatius repeatedly insists: "Let that be deemed a proper eucharist, which is [administered either by the bishop (ὁ ἐπίσκοπος ὁ ὁῦς) or by one to whom he has entrusted it (ἡ δὲ ἅν αὐτὸς ἐπέτρον)]" (Ign. *Smyr.* 8.1; *ANF* 1, p. 90/232; Greek text acc. to *SC* 10 via *TLG*; cf. *Eph.* 5.2; *Magn.* 7.1–2; *Trall.* 2). Throughout his letters, Ignatius is maintaining his model of locally based churches led by one bishop, accompanied by a plenum of presbyters and assisted by a collective of deacons. The eucharist occupies a central place in the life of these communities, and it is fundamentally associated with the role of the bishop (Brent, 2009, pp. 71–94). Consistent with the main premise of the Lawson-McCauley theory, evidence from later centuries indicates that the Church found the

model suggested by Ignatius and others to be highly attractive, despite the numerous controversies over what exactly it was that was to be performed by bishops alone.

Ritualization of Meals in Time and Space

When, how often, and where did early Christians gather for communal meals? From the perspective of ritualization, these are highly interesting questions. A number of sources indicate that Christians started quite early on to meet on a regular basis—already around the middle of the first century, preferring the time slot of Sunday evening (cf. Luke 24:14–43; John 20.19, 26; Acts 20:7; 1 Cor. 16:2; Rev. 1:10; Gospel of Peter 35, 50; *Did.* 14.1; Barn. 15.9; Just. *I Apol.* 67.3; see Alikin, 2010, pp. 40–49). From the beginning of the second century, there is also evidence of morning gatherings, probably held on the same day but also more often (see esp. Plin. *Ep.* 10.96.7; see Alikin, 2010, pp. 79–102). At least some of these gatherings, however, did not involve eating. All in all, we should assume that the majority of Christian communal meals at this stage still took place in the evening and took the form of a dinner.

Where did the early Christians celebrate these communal meals? In earlier scholarship, the widespread assumption was that the Christians of the first two centuries met almost exclusively in houses owned by wealthier members of the community (for an overview, see Adams, 2013, pp. 1–5). Following that assumption, the meal of Paul’s Corinthians, for instance, has been modeled as taking place in the triclinium and atrium of a Corinthian villa (Murphy-O’Connor, 2002 [1983], pp. 153–161). More recently, however, it has been argued that it is also possible to imagine a completely different scenario, locating the participants, for example, in the upper-story room of a workshop (Horrell, 2004). This alternative view draws an analogy with several meals reported in the New Testament, which are explicitly accommodated in an upper-room space (Mark 14:15; Luke 22:12; Acts 20:9). There is also some evidence that during the first few centuries, Christians used a number of other spaces (for a comprehensive overview of the available evidence, see Adams, 2013, ch. 6–8). For instance, bearing in mind the New Testament stories of the feeding of the multitudes, we should not exclude the possibility that some meals took place outdoors.

On the basis of these pieces of evidence, recent research has challenged the household church scenario of Christian origins as unfounded; it has even been suggested that the term “household church” should be dropped from scholarly usage as a misleading category (Adams, 2013, p. 202). If this view is justified, it has important implications for our understanding of early Christian meals. If we were to see a snapshot of the life of a first- or second-century Christian community, we should not be surprised to see people gathered around a meal in a

rented room in an inn or tavern, in a barn outside the city walls, next to a tomb in a cemetery, or at a picnic on a river bank.

Realizing the wide variety of options for spaces to be occupied by early Christians for their communal meals, we have to ask how representative the ideal model of the Greco-Roman banquet is of early Christian meals. This is an important issue given that viewing early Christian meals through the prism of the Greco-Roman banqueting tradition is considered one of the most important achievements of contemporary scholarship (for an overview of the work of the SBL seminar *Meals in the Greco-Roman World*, see Taussig, 2012).

What, then, are the shared characteristics of early Christian meals and the Greco-Roman banqueting tradition? First, it is worth mentioning that a majority, if not all, of the New Testament passages concerned with meals imply reclining as the dining posture: the verbs used are *ναίτω* (Mark 8:6, Matt. 15:35, Luke 22:14, John 6:10), *νακλίνω* (Mark 6:39, Matt. 14:19), *νάκειμαι* (Mark 14:18, Matt. 26:20) and *κατακλίνω* (Luke 9:15, 24:30). It thus seems that reclining was seen as an ideal way of dining. Furthermore, reading books aloud, the joint singing of hymns, and listening to sermons—a program accompanying Christian meals from a very early phase—also greatly resembles the banquet model and the type of activities we would expect to find occurring during a symposium (König, 2012). Finally, the ritualized Christian procedures concerning bread and wine (i.e., the thanksgiving or blessing prayers) are the sorts of practices we would anticipate at a traditional banquet. They have a strong similarity with the practice of libation, whereby the presider would open the symposium part of the banquet by pouring out some wine in the name of a patron deity (see, e.g., Diod. Sic. *Bib. hist.* 4.3).

On the other hand, we have to ask whether reclining was a universal posture at early Christian meals (cf. 1 Cor. 14:30), especially those occurring outside a specialized dining setting (Dunbabin, 2003, p. 183). Over time, the differences became more evident: Christians started to use their own specialized spaces, ritual specialists started to occupy a more central role, and meal gatherings ceased to be seen primarily as banquets and took on a stronger symbolic meaning. With the loss of the worldly aspect, representing a key aspect of ritualization as it is understood in this thesis, one can trace the development of important cognitive functions of early Christian meals.

The Earliest Christian Meals and Ritual Efficacy

The bread and wine consumed by the earliest Christian communities were of course not believed to be filled with or bearing sanctity or sacrality to the same extent as in the third century onward, as discussed in Chapter 3. However, already Paul considered the implications for those

who might consume the blessed bread and wine in an unworthy manner (*ναξίως*), accusing them of being guilty concerning the body and blood of the Lord (cf. 1 Cor. 11:27). They should recognize that the food and drink is the “body” and “blood”; otherwise they are eating and drinking a judgment upon themselves (11:29).

As we will see in the next chapter, the Lord’s Supper as presented by Paul undoubtedly suggests an event of special significance. For Paul, consuming the bread and wine in the right manner probably served primarily as a metonymy for the morally appropriate behavior of the participants throughout the gathering. Nevertheless, read literally, Paul’s words could easily be taken as referring to the bread and wine themselves. Thus, the bread and wine could come to be seen as possessing a special quality. One consequence of this view is that the ingesting of such bread and wine could eventually be interpreted as a means of acquiring the special quality previously dwelling in the food. Although it is not full-fledged in Paul, we should not overlook the fact that Paul’s words open the door to this interpretation, and that the consumed bread and wine could thus fulfill important psychological functions for those who understood their meals in this way.

From the perspective of ritual theory, to believe that the bread and wine as such possess a special quality presupposes that they acquired this quality through earlier ritual procedures of being prayed over. As discussed in Chapter 1, recent research concerned with the intuitive human evaluation of ritual efficacy has revealed that people are more prone to believe that a ritual is effective (i.e., the bread and wine possess a special quality) when it is more ritualized and when it involves a ritual specialist in certain roles (Barrett & Lawson, 2001; Legare & Souza, 2012).

On the basis of information discussed above concerning the role and the form of prayer over the meal elements at Corinthian meal gatherings, it is reasonable to assume that they were ritualized only to a very limited extent. In Ignatius, however, we meet an author strongly insisting on the central role of the bishop in local churches. If Ignatius’ addressees took him seriously and conducted their meal gatherings as he expected, we can assume that they also considered the elements of the meal to be empowered by a special quality (Ign. *Eph.* 5.2) and could perceive them even as the “medicine of immortality” (Ign. *Eph.* 20).

Justin makes a different point. In his case, for the first time, it makes sense to use the term “consecration” and to distinguish between what *affects it* (i.e., the prayer) and what *it affects* (i.e., it “eucharistizes” the meal elements, which can now produce a transformation of their consumers) (see Buchanan, 2007a, pp. 24, 27). While for Ignatius what primarily guaranteed the success of the ritual was the episcopal authority, in the case of Justin it was the

ritual significance of remembering (*anamnesis*) the death of Jesus, as he has become body and blood, which have been given for us (Just. *Dial.* 70.4; *I Apol.* 66.2; cf. *Dial.* 117). As a result of this act of remembrance, the participants can now partake of the “eucharistized” bread, wine and water (τὸ εὐχαριστηθέντος ἄρτου καὶ οἴνου καὶ ὕδατος, *I Apol.* 65.5).

We can only speculate as to the precise content of the eucharistic prayers, which probably did not include the words of institution (Buchanan 2007a, pp. 23–26), which Justin refers to as being improvised (Just. *I Apol.* 67.5; see above). This is a significant difference from the *Didache*. Similarly to Justin (*I Apol.* 66.1), the *Didache* is explicit in restricting the consumption of the eucharist to those who have been baptized. As a reason for this restriction, the author refers to a saying ascribed to the Lord: “Do not give the holy (τὸ ἅγιον) to dogs” (*Did.* 9.5). We do not have conclusive evidence to decide whether what we are dealing with here is primarily a social norm, signifying group exclusivism, or a belief in the eucharist as equipped with a special quality. While the historical context may support the first option (see Sandt, 2015), drawing on the theoretical framework elaborated above we should not exclude the second as a possibility. Since the rigidity of the prayers counts among those aspects of ritualization which intuitively contribute to a ritual being evaluated as more effective, the blessing of the bread and wine by a fixed (rather than improvised) prayer can easily come to be perceived as the prayer somehow altering the elements.

The eucharistic theology advanced by the author of the *Didache*, however, also suffers from a serious disadvantage. Contrary to the rest of the sources discussed here, the meal elements are not related to, compared to or identified with the body and blood of Jesus. Given this gap, a Christian community otherwise impressed by the eucharistic ritual prescribed in the *Didache* could simply lack the conceptual basis to grasp the holiness ascribed to the meal elements. The analogy between the bread and the Church (*Did.* 9.4) sounds like a good metaphor, but in a moral rather than ritual context, including the eating of it. In the context of food ingestion, linking the bread and wine with the central cultic supernatural figure (i.e., the body and blood being that of Jesus) seems to be a much more promising rhetorical strategy, regardless of the impossibility of determining to what extent this link was merely metaphorical and to what extent it was intended as an expression of identification.

Conclusion

To return to the analogy of the flight over Africa referred to in the beginning, we now find that with the support of relevant theorizing we are able to approach the documents informing us about early Christian ritual meals as offering much more than occasional glimpses

through the clouds. Equipped with external knowledge anchored in contemporary behavioral, cognitive and social science, we can identify certain developmental trajectories; these in turn allow us to build models and formulate hypotheses which can at least partly guide our expectations as to what likely took place at certain times and places and what did not.

With the theoretical paradigm adopted in this chapter, we have been able to trace in our earliest sources a number of ritual innovations entering the development of early Christian ritual meal practices: the first hints of giving thanks over the meal elements being intimately tied to breaking of the bread, as evidenced in retrospective narratives about Jesus and his earliest followers throughout the New Testament; the demand for a person of religious significance to preside over the ritual, a demand loudly and repeatedly articulated by Ignatius of Antioch; the understanding of the ritual as a transformative process anchored in the act of Jesus, as first elaborated by Justin Martyr; and the rigidity of the prayers to be recited over the meal elements, as prescribed in the *Didache*. The implementation of these innovations in the life of individual communities, followed by a deeper elaboration of some of them, was complemented by processes of the gradual ritualization of space and time and of the program of the gatherings as a whole. Finally, the declining role of the food as such was accompanied or even counterbalanced by the growing interest in its religious significance. In the next chapter, I will turn to the tradition of the Lord's Supper as presented by Paul, which offers new insights into how the cognitive function of early Christian meals has been conceptualized.

CHAPTER 5: THE LORD’S SUPPER TRADITION IN PAUL: A COGNITIVE RECONSIDERATION OF PAULINE RITUAL LANGUAGE¹⁸

Introduction

This chapter brings us to the earliest layer of the available historical material: Paul’s 1 Corinthians and the tradition of the Lord’s Supper first introduced in this letter. Drawing on the theoretical framework elaborated in this thesis, here I propose a counterbalance to certain trends in scholarship on the earliest Christian meals, which tend to overestimate their social functions while overlooking some of their underlying formal aspects. First, I demonstrate this tendency by introducing certain claims from the scholarly discussion concerning the Pauline institution of the Lord’s Supper. Furthermore, I return to a selection of cognitive theories of ritual, which I use for a detailed analysis of the available evidence on early Christian meal practices in Corinth, illustrating how far we can get without taking the social functions of those meals into account. Finally, I argue that while Paul himself offered both Christological and ecclesiological conceptualizations of bread and wine consumed during these meals (i.e., identifying the bread both with Jesus’ body and the church), from the cognitive perspective the Christological one was more appealing on an intuitive level for those who were confronted with it than the alternative. I suggest that the Christological conceptualization became increasingly popular as the early Christian meals inspired by the tradition of the Lord’s Supper came to be more and more ritualized over time. In that way, the Christological conceptualization could form a basis for subsequently evolving beliefs in the magical efficacy of the eucharist.

Both our commonsense thinking and anthropological theory are in agreement that collective rituals help us to understand who we are as a society and promote our social identity as a group. In his attempt to rectify meal gatherings in Corinth, Paul probably anticipated this capacity of collective rituals, and his modern interpreters are well aware of it as well. What may be less obvious, however, is that in order to fulfill this function, ritual must somehow be processed from the outset by the human mind. In the course of a ritual, our mind has to attach

¹⁸ This chapter has been formerly published in Finnish as Kaše, 2016a.

itself to various special objects, to guide us in following closely what other people are doing, and to then remember it from one occasion to the next. Recent cognitive theories of religion, ritual and magic provide us with the tools to analyze rituals at this deeper level, setting aside for a moment their social function. Drawing on that, in this chapter the more common scholarly focus on the social functions of early Christian ritual meals is accordingly supplemented by one of their underlying formal characteristics.

The theories expanded on in this chapter in more detail suggest that as a meal becomes more ritualized, people also incline to interpret it in supernatural terms. As I demonstrated in Chapter 3, since the end of the second century at the latest, a substantial proportion of Christians probably believed that the food stuff consumed during their communal meal gatherings was possessed of a supernatural power. In Chapter 4, I further demonstrated how emergence of these beliefs was related to the ritualization of early Christian meals. To deepen this analysis, this chapter focuses in detail on the institution of the Lord's Supper promoted by Paul in 1 Cor., which is our earliest document reporting about early Christian meals in general. Instead of concentrating on Paul's own thought, his sources and the actual situation in Corinth, however, the chapter aims to evaluate the potential impact of the Lord's Supper discourse in general on the meal-related beliefs of other Christians, who were somehow familiar with that discourse and who certainly used it in one way or another when developing their own communal meal rituals and beliefs accompanying them.¹⁹

In the first part of the chapter, I focus on the history of scholarship on 1 Cor. 10:16–17 and 11:17–34, which later enables me to offer a critical assessment of the social-functional approach to early Christian meals in general.²⁰ Furthermore, I offer an introduction into certain cognitive theories of ritual while considering their relevance for the study of this case. Finally, I offer a critique of the scholarly trend toward interpreting the Pauline metaphor of “bread is Jesus' body” in purely ecclesiological terms (“Jesus' body is the Church”) and argue that the Christological dimension of the metaphor should not be overlooked, especially considering the magical beliefs concerning the eucharistic elements that became dominant in the later history of the Church.

¹⁹ Although the term “Lord's Supper” probably was generally used by Christians to designate their meals in the first three centuries (McGowan, 2015, p. 505), in the case of analyzing Pauline churches there are a number of aspects that enable us to understand it as an institution, tradition or discourse.

²⁰ I use the term “social-functional approach” quite freely to cover a broad variety of research enterprises in the study of religion; what they have in common is that they interpret or explain a religious phenomenon (e.g., a ritual) primarily by reference to its possible social function for a given social group.

Paul and the Lord's Supper: An Overview of Recent Scholarship

In what follows, I introduce the most important opinions concerning the key passages from Paul's text. It is an important task, as it later should help us to understand why the New Testament scholars are often skeptical of cognitive theories of ritual, focusing on its underlying mechanisms instead on its social functions. In 1 Cor. 11:20, Paul refers to the meal gathering in Corinth as the κυριακὸν δεῖπνον. This term implies an evening gathering held for the purpose of feeding the participants. In a more narrow sense, δεῖπνον refers to the classical Greek and Roman institution of communal banqueting, typically followed by a symposium (see especially Klinghardt, 1996 and Smith, 2003). In the Greco-Roman context, it would have been strange if early Christians had not participated in this basic form of cultural activity.²¹ Paul connects this actual practice to the supper of Jesus "on the night when he was betrayed" (11:23) and quotes the words of institution (11:23–25). Since Paul is the earliest witness to use this formula,²² it is not clear how complex is the Christian tradition he is drawing on. The link to the Jewish Passover meal is likewise unclear, to say the least (Marcus, 2013); considering the immediate context, the relationship of the so-called Lord's Supper to the Passover is apparently not central for Paul. Although the reference to the proclamation of Jesus' death is present (11:26), it gives the impression that it is used more to stress certain aspects of the meal than to describe the whole theme. As stressed by McGowan (1999, p. 78), "Unlike the earliest presentations of that tradition in the Gospels, this text does not tell the story of the meal in the course of actually recounting Jesus' passion and death, but invokes the narrative for an explicit and particular purpose regarding the life of the community at Corinth, that is, the proper ordering of the eucharistic assembly." It is this practical dimension that gives the passage such a central role in the study of early Christian meals.

It has been widely recognized that Paul's agenda in Chapter 11 has much more to do with current social problems in Corinth than with the meal gathering itself (Theissen, 1982). Indeed, a substantial portion of the text supports this view (esp. 1 Cor. 11:17–21). It suggests

²¹ As McGowan (2014, p. 20) stressed, "In fact it would have been strange had they not shared food together in both a festive and a formal way, since most other definable social groups in the ancient Mediterranean world did the same."

²² A few decades later, it reappears with some modifications in accounts of Jesus' Last Supper traced by the Synoptics (Matt. 26:26–29; Mark 14:22–26; Luke 22:14–23), a development which I will not follow here in any detail.

that “divisions” (*χίματα*, 11:18) had emerged among the participants, as some of the members were eating their “own supper” (*τῷ ἰδίῳ δεύον*) and were drunk (*μεθύει*) before the others arrived (11:21). At the end of the passage, therefore, Paul strictly urges them to eat together (11:33).²³ Other scholars, rather than focusing on the assumed social conditions and tensions, have instead engaged in an analysis of Paul’s own rhetoric in the passage. Murphy-O’Connor, for instance, assumes that the basic problem faced by Paul is that the Corinthians were lacking “the true nature of Christian community” (Murphy-O’Connor, 1976, p. 72) and that Paul’s use of the term “body” is here (especially in 10:16 and 11:29) used predominantly as “an allusion to the community as the body of Christ” (Murphy-O’Connor, 1977, p. 67).

An important discussion has focused on Paul’s use of the so-called words of institution in the text.

11:23: For I received from the Lord (*ἀρέλαβον* *τοῦ κυρίου*) what I also delivered to you (*ὁ καὶ ἀρέδωκα ὑμῖν*), that the Lord Jesus on the night when he was betrayed took bread,

11:24: and when he had given thanks, he broke it, and said (*εὐχαριστήσας ἔκλαεν καὶ εἶπεν*), “This is my body, which is for you (*τοῦτο μού ἐστιν τὸ ὄμα σὺ ἐρ ὑμῶν*). Do this in remembrance of me.”

11:25: In the same way also he took the cup, after supper, saying (*τὸ αὐτὸ ὅτιον μετὰ τὸ δεῖν αἰ λέγων*), “This cup is the new covenant in my blood (*τοῦτο τὸ στήριον ἡ καινὴ διαθήκη ἐστὶν ἐν τῷ ἔμῳ αἵματι*). Do this, as often as you drink it, in remembrance of me.”

Like a number of other earlier scholars, Murphy-O’Connor also presupposes that the words of institution as used here “are derived from liturgical versions” (Murphy-O’Connor, 1977, p. 59). However, this is a problematic assumption. As Stanley Stowers reminds us, “If we did not know that the later church had incorporated these words into its liturgy, we would have no clue to even suggest that the words were repeated in worship” (Stowers, 2011, p. 136; see also Nicholson, 1986, p. 3, and especially McGowan, 1999b). Thus, Paul’s purpose in quoting this formula, which was probably already traditional, seems to pertain more to etiology or catechesis (Stowers, 2011, p. 136).

Another crucial issue deserving attention arises from Paul’s use of the term *κοινωνία* in the context of 10:16–17, as well as from the formulation “discerning the body” in 11:29:

²³ According to Theissen, this verse is a key to interpreting the whole passage, including the role of the words of institution. He suggests that for Paul, the words of institution were to be recited over the food brought mainly by the wealthier members of the community; as such, they had the “function of converting a private contribution into community property” (Theissen, 1982, p. 148; see also p. 151). Thus, the role of the words of institution is primarily one of social integration.

10:16: The cup of blessing that we bless (Τὸ στήριον τῆς εὐλογίας ὃ εὐλογοῦμεν), is it not a participation in the blood of Christ (οὐχ κοινωνία ἐστὶν τοῦ αἵματος τοῦ κυρίου τοῦ)? The bread that we break (τὸν ἄρτον ὃν κλῶμεν), is it not a participation in the body of Christ (οὐχ κοινωνία τοῦ σώματος τοῦ κυρίου τοῦ ἐστιν)?

10:17: Because there is one bread, we who are many are one body, for we all partake of the one bread (ὅτι εἷς ἄρτος, ἓν σῶμα οἱ πολλοί ἐσμεν, οἱ γὰρ πάντες ἐκ τοῦ ἐνὸς ἄρτου μετέχομεν).

11:29: For anyone who eats and drinks without discerning the body eats and drinks judgment on himself (ὁ γὰρ ὃς θίωσιν καὶ πίνωσιν κρίμα ἑαυτοῦ ἐθίει καὶ πίνοι μὴ διακρίνων τὸ σῶμα).

First, Paul is the NT author who most frequently uses the term κοινωνία and its compounds (Jourdan, 1948, p. 11). A hotly debated question, however, is how this term should be understood, especially in the context of 10:16–17 (Jourdan, 1948; Prout, 1982; Songer, 1983; Sigal, 1983; Sebothoma, 1989). The assumed meaning varies between “participating in something or sharing (*Anteilhaben*) on the one hand, or community, close union (*Gemeinschaft*) on the other” (Sebothoma, 1989, p. 63; see also Lampe, 1991, p. 208). Matthias Klinghardt has recently argued that the second alternative, stressing the ecclesiological dimension of the meal, is the only possible interpretation.²⁵ With reference to the words of institution, Klinghardt further introduces textual reasons to support that “‘This is my body’ does not refer reflexively to Jesus’ own body (physical or other), but to the group of his disciples” (Klinghardt, 2010, p. 5).²⁶

In 1 Cor 11:29, there arises a second question, analogous to that asked in relation to 10:16: “when we ‘discern the body’ are we discerning a *sacramental presence* or are we discerning the *presence of the church*, our fellow believers in Christ?” (Das, 1998, p. 187, italics added).²⁷ Modern interpreters, as stressed by A. Andrew Das, have gone so far as to argue that

²⁵ Klinghardt concludes with a reference to 10:17: “Deutlicher als hier lässt sich nicht sagen, dass το σῶμα nicht den Körper Jesu, sondern die Gemeinschaft der Esser bezeichnet” (Klinghardt, 2011, p. 53).

²⁶ See Klinghardt, 2010, p. 6: “If (...) *soma* is to be interpreted ecclesologically in 10:16–7 and 11:29, there is no reason to imply a different understanding in 11:23. Even when he quotes the tradition of Jesus’ Last Supper, Paul understands the saying over the bread as referring to the body of the disciples. The ecclesiological meaning of *soma*, therefore, guarantees the consistent logic of Paul’s argument in 11:17–34: His criticizing of the Corinthians’ *idion deipnon* (11:21) as opposed to the *kyriakon deipnon* (11:20) is in all single instances concerned with the ritual unity of the group gathered for the Lord’s dinner.”

²⁷ Dale Martin has summarized four widespread opinions on this issue: “Much ink has been spilt over this phrase. Does soma here point to (a) the eucharistic substances (‘discerning the body’ thereby meaning handling the elements properly and recognizing their true nature), (b) the body of Christ (meaning that one should fully recognize the eucharist as a memorial of the death of Christ), (c) the Church as the body of Christ (‘discerning the

the ecclesiological dimension is predominant in the text (Das, 1998, pp. 197–198). In recent years, this position has been advocated, for instance, by Valeriy Alikin (2012). Although Alikin is aware of the textual tradition of interpreting the phrase “discerning the body” Christologically by extending διακρίνων τὸ σῶμα by adding τοῦ κυρίου (manuscripts ²⁸ C³ D F G K L P Ψ 81. 104. 365. 630. 1175. 1241. 1505. 1881^c. 2464), he maintains that for Paul “the ‘body’ here probably has to be taken as representing the congregation” (Alikin, 2012, pp. 123–124, n. 21). However, even if we accept that the ecclesiological meaning of the term σῶμα is important for Paul (see below), that does not justify the conclusion that the Christological dimension is completely absent in his use of the term here. While the longer, explicitly Christological textual variant probably emerged as a reflection of later eucharistic development, it seems implausible that it would have introduced a completely new meaning to the text. It can thus be used as an argument for the view that Paul’s expression was open to a Christological interpretation already very early on, perhaps even from the beginning.

Cognitive vs. Social-Functional Approaches to Early Christian Meals

The previously introduced scholars are either primarily interested in gaining new insights into Paul’s thinking as embedded in the text or in getting a better understanding of the situation in Corinth, sometimes both at the same time. To be sure, both agendas are completely legitimate and nowadays we can welcome a lot of fresh insights in both respects. However, my approach in this chapter goes in a different direction. First, regarding Paul’s text, I focus on general—or even universal—forces driving its historical reception rather than on its “original meaning.” Second, concerning the situation in Corinth, I go beyond the actual historical context and how we interpret it on the basis of comparative evidence and instead analyze the material by using cross-culturally valid findings from cognitive science.

From that perspective, I assume that some concepts used by Paul were more memorable, some metaphors were better understandable, some arguments were more persuasive and some practices promoted by him were more attractive than others. What is more

body’ thereby meaning understanding the significance of a united church and treating that social entity properly), (d) the body of the Christian (either one’s own body, about which care must be taken, or the body of one’s Christian neighbor, which one must be careful not to offend or mistreat)? I want to take soma in 11:29 as referring to all these things” (Martin, 1995, pp. 194–195).

characteristic of the approach adopted here is that my analysis does not rely merely on the knowledge of Paul's text in its historical context, but also on empirical, often experimental, and ideally transculturally validated findings of cognitive science concerning the functioning of the human mind. Following this approach, later in this chapter I try to answer how particular concepts from Paul could interact with the ritual intuitions of those who participated in early Christian meals and were there confronted with these concepts, and how this interaction of concepts and practices could further influence the historical development of those meals.

However, first it is important to take a closer look at what makes the ecclesiological interpretation of Paul's words in 10:16–17 and 11:29 so appealing to scholars. What has led some to even claim that, for Paul, “‘This is my body’ does not refer reflexively to Jesus’ own body (physical or other), but to the group of his disciples” (Klinghardt, 2010, p. 5)? A closer look at the reasoning of the scholars advocating an ecclesiological interpretation of 10:16–17 and 11:17–34 reveals that their opinions are based on a mutually supportive combination of two things: on Paul's own prosocial rhetoric and on general assumptions regarding what a communal meal can do for a social group, sometimes with reference to social-functional theories of ritual. In what follows, I turn to the second aspect, that is, how the scholarship approaches the social functions of early Christian meals. I suspect that this is directly related to more general issues concerning the way how this scholarship reads Paul.

Social-functional approaches to early Christian meals emerged in the 1990s and over a decade they have become a well-established research program in the field (Klinghardt, 1996; Smith, 2003; Taussig, 2009; Smith & Taussig, 2012; Klinghardt & Taussig, 2012). Inspired among others by Mary Douglas' understanding of meals as a code (Douglas, 1997; McGowan, 1999a, pp. 3–4; D. Smith, 2003, p. 9; Taussig, 2009, pp. 65–66), scholars have concentrated in particular on the question of how meals contribute to the emergence of a specific Christian identity, as revealed by the creation of social boundaries, bonding, obligation, stratification and equality (Smith 2003, pp. 9–11; Taussig, 2009, p. 19). Within this framework, Rachel McRae begins her analysis of Christian meal practices in Corinth with the assumption that “[i]n effect, Paul uses the meal ritual to create a new Christian social identity” (2011, p. 166). From that perspective, both Paul's agenda and the practice of Corinthians are approached through the same prism of interest in the social functions of the meals.

Hal Taussig's approach, specifically informed by ritual theory, is the one most elaborated in this respect. According to him, one of the mistakes of the previous scholarship is that “the conventional idea of ritual as esoteric gesture (in this case, a medieval eucharist) remained intact and unconnected to social structures and experimentation” (2009, p. 56). He

then construes an alternative framework with reference to the ritual theories of Catherine Bell, Jonathan Z. Smith, Pierre Bourdieu, Victor Turner and Mary Douglas (2009, pp. 57–66).²⁹ Drawing on these scholars, Taussig views ritual as “a kind of social intelligence, often reserved for subject matter that has proved too complex for individual discernment, too frightening for more direct address, or attached to vying long-term social loyalties” (2009, p. 66). Taussig constructs his argument on the shift in (non-cognitive) ritual theory over the last forty years, which has emphasized “the social power of ritual rather than the metaphysical, psychological, or institutional meanings of ritual” (2009, p. 57). We may ask, however, whether the concentration on the social dimension of ritual (especially its potential in identity construction) does not overlook something important about ritual as such and how it is processed by the human mind.

Cognitive Theories of Ritual and Ritual Efficacy

To clarify the position proposed here, it might be useful to elaborate on the theoretical approach to ritual introduced in Chapter 1 in respect to the issue of the social functions of rituals. In that context, we can distinguish between on the one hand the social function of a ritual, on the other its formal characteristics. As we have seen in Chapter 1, in the latter we can identify a cluster of phenomena. First, there is the set of procedures of which the ritual consists. These procedures are often based on activities belonging to or derived from ordinary life (ritual eating is still an act of eating), but their “mundane” function is somehow weakened. The procedures are typically marked by a certain rigidity, carefully following previous or normatively fixed performances of the ritual. Second, there is the overall conceptualization of the procedures and their aims, more specifically in supernatural terms (in other words, in terms of causal connections extending beyond what is shared as mundane causal connections).³⁰ While these characteristics can have substantial consequences for the social functions of ritual, they can be also seen as analytically independent of those functions. It is helpful first to look at what exactly the ritual participants do and say, in order to compare these from one occurrence

²⁹ For a very similar theoretical framework applied in the context of 1 Corinthians, see Al-Suadi, 2011.

³⁰ To give an example, we can speak of supernatural belief exceeding mundane causality when someone anticipates that consumption of a ritual meal will have a healing effect. Since there is no support for this belief on the level of mundane causality, a supernatural conceptualization has to be adopted.

of the ritual to another, before considering what social functions these bodily and speech acts may have for the participants.

This distinction between the formal characteristics of a ritual and its social functions is one point of departure for the cognitive science of religion and its critique of social-functional approaches to religion (Boyer, 2001, pp. 23–27). Certainly, religious beliefs and practices do have important social functions to perform, and cognitive theorists are interested in studying them, too;³¹ in order to perform them, however, those beliefs and practices first have to be somehow processed by the human mind. At this level, as has been demonstrated in the first chapter, the formal characteristics of a ritual can be seen as responsible for the activation of particular cognitive mechanisms. We can envisage a continuum with ordinary, everyday behavior at one end and ritualized behavior, conceptualized in terms of supernatural causal connections, at the other; somewhere on this continuum are located all types of behavior, religious or secular, which are to some extent ritualized. Thus, there is not such a thing as a ritual *per se*. The important question for the cognitive science of religion, then, is what kind of cognitive mechanisms move us as humans from ordinary types of behavior to ritualized ones, which under certain conditions may be supplemented with supernatural beliefs.

As we have also seen in Chapters 1 and 3, the connection of ritual with a supernatural outcome, while overshadowing its social functions, brings us close to the issue of magic. Since for the cognitive perspective it is secondary whether a behavior is individual or collective, any distinction between religious ritual and magic by reference to their different social functions (as has often been done in previous scholarship; see Durkheim, 1995, pp. 39–44) is unjustified, even if we accept that socially this distinction has important implications. It seems groundless to distinguish between ritual and magic in terms of their intended consequences; to say that a magical behavior is intended to have a mundane effect and religious ritual a supernatural one (see Pyysiäinen, 2004, pp. 96–97) overlooks the fact that in actual practice both these effects are often mixed: one participant in a ritual may believe, for instance, that by consuming the eucharistic bread and wine he or she is gaining an afterlife (i.e., a supernatural effect) while another may believe that he or she is receiving a substance protecting him or her from death (i.e., a mundane effect). In both cases, the behavior and related mechanisms are the same, and it is only the conceptualization that differs. In other words, due to the universal features of the human cognitive architecture, human behavior—whether individual or collective, secular or religious—is often ritualized. Once an action is ritualized, it is frequently supplemented by

³¹ In this respect, Uro (2016) offers an overview of evolutionary and cognitive ritual theories dealing with cooperation, which he further uses in his socio-cognitive analysis of Pauline Christianity.

supernatural beliefs, no matter whether those beliefs are characterized as pious or magical. This trend is even more typical of an often repeated behavior where the intended outcome is not easily understood. When we apply this way of thinking to ancient communal meals, as has been done more extensively in Chapter 4, we see that such practices were a subject of ritualization located somewhere on the continuum from ordinary behavior to highly ritualized actions supplemented by supernatural beliefs. In what follows, at first, I briefly sketch some theories addressing the procedures which characterize ritual generally and its constitutive structural elements (i.e., the formal characteristics of ritual). Further on, I move to theories focusing on the conceptualization of the supernatural aims of ritual (i.e., its intended efficacy).

As we have seen in Chapter 1, cognitive anthropologists Pascal Boyer and Pierre Liénard introduced the model of “ritualized behavior,” by which they refer to “a specific way of organizing the flow of behavior, characterized by *compulsion* (one must perform the particular sequence), *rigidity* (it must be performed the right way), *redundancy* (the same actions are often repeated inside the ritual), and *goal-demotion* (the actions are divorced from their usual goal)” (Liénard & Boyer, 2006, p. 815; see Boyer & Liénard, 2006). According to Boyer and Liénard, when a ritualized behavioral pattern is conducted or observed, the human mind activates more powerfully the so-called perceptual action-parsing system,³² which is, evolutionary speaking, a natural response to a perceived threat. Uncovering this causality can help to explain why people typically tend to imitate what other ritual participants do, as well as why they are able to remember what they have seen and done and can repeat it faithfully on a later occasion.

To account for the more general structural aspects of rituals, the cognitive scholars of religion E. Thomas Lawson and Robert N. McCauley distinguished between ritual competence and ritual performance. Following Noam Chomsky’s ideas of a universal grammar, they formulated their *ritual competence theory* (Lawson & McCauley, 1990 and McCauley & Lawson, 2002). At the center of this theory lies the *ritual form hypothesis*, which has been successfully explored experimentally (Barrett & Lawson, 2001; Sørensen, Liénard, & Feeny, 2006). According to this hypothesis, humans have ritual intuitions that are responsible for evaluating anticipated ritual efficacy based on the type of ritual action structure. Any action, including ritual action, can be analyzed as consisting of (1) an *agent*, (2) an *action* (by means

³² As introduced in Chapter 1, due to this system the human mind differentiates between three hierarchical levels of action perception: (1) gestures (acts or movement), (2) episodes (sets of acts that are relevant to each other in a certain way), and (3) scripts (a series of episodes linked together around a certain task). See Zacks & Swallow, 2007 and Zacks & Tversky, 2001.

of an instrument), and (3a) a *patient* or (3b) an *object*. The anticipated ritual efficacy is driven by a link between a supernatural agent and one or more of these three structural elements. In the case of baptism, for instance, it is the priest who, at least at the intuitive level, is seen as the most important structural element responsible for the success of the ritual. According to Lawson and McCauley, this is because he has passed through a preceding ritual of ordination, which gave rise to a link between him and the supernatural agent Jesus. A priest who is not appropriately ordained is viewed as causing a failure of the ritual.

The effect of ritualization itself on anticipated ritual efficacy was not of interest to Lawson and McCauley.³³ But the experimental findings mentioned in Chapter 1 in respect to the ritual stance hypothesis by the psychologists Cristine Legare and André Souza (Legare & Souza, 2012), who concentrated on the causally opaque character of magical rituals, indicate the relative importance of these aspects, especially with respect to rigidity and goal-demotion. In their experimental procedure, the participants rated the anticipated efficacy of lightly manipulated traditional magical rituals from Brazil. In the last of a series of experiments using U.S. university students,³⁴ they found significant effects when they experimentally manipulated four aspects of these Brazilian magical rituals: specificity of time, repetition of procedures, number of procedural steps, and presence of a religious icon. When one or more of these specifications was absent from the written instructions for the ritual, the participants tended to rate the efficacy of that ritual as significantly lower (Legare & Souza, 2012, pp. 7–9). If someone wants a ritual to have a healing effect, for instance, he or she will intuitively prefer one which is to be performed at the time of the full moon (specificity of time), at a holy place and in the presence of a religious icon.

What has not been discussed so far is the fact that to grasp the experience of a ritual as efficacious, our mind has to be able to conceptualize the effect. We are not completely satisfied when we experience a ritual as working “somehow”; we also need to be able to express in our own words “how” it works. In his cognitive theory of magic, Jesper Sørensen (2007b) addresses this issue while using the conceptual blending theory.³⁵ Unlike a majority of applications of

³³ See Liénard & Lawson, 2008, p. 160. See Sørensen, 2007a, p. 292: “(...) rituals are not only actions in which superhuman agents are active, but are actions distinguished from ordinary actions by the ritualization of one or several elements, whether agents, action sequences, or objects.”

³⁴ To give their findings transcultural validity, it was important to conduct the experiment in various cultural contexts (i.e., not only in Brazil but also with university students in the United States).

³⁵ For conceptual blending, see especially Fauconnier & Turner, 2002; for the historical connection between conceptual blending theory and the related conceptual metaphor theory, see the overview in Fauconnier & Lakoff, 2009.

conceptual blending theory across the humanities, including biblical studies (Howe & Green, 2014), Sørensen uses this paradigm in an explanatory way in combination with a number of other insights concerning evolutionary roots of human thought and behavior.

It has been suggested that conceptual blending is a useful psychological heuristic in dealing with abstract concepts from the domains of science, philosophy or theology. In conceptual blending, our mind tries to make such concepts more understandable by “mapping” them onto perceptually more transparent concepts. To give a typical example, when we say “love is a journey,” we gain a better understanding of love due to our common experience of travel: as a journey, love is mapped in terms of having a beginning and an end, as following a particular path, etc. This mapping process results in the emergence of a new concept in the so-called blended space (see below). Thus, conceptual blending theory is far more than a linguistic theory of metaphor; it is rather a general psychological account of how the mind deals with abstract and difficult concepts, what is associated with human learning, causal reasoning, intuitive ontology etc. in general.

Following McCauley and Lawson’s action structure approach to ritual and extending it by means of conceptual blending theory, Sørensen uses the example of the Roman Catholic eucharist to illustrate several points of his theory (2007b, pp. 65, 85–87, 98–101, 105–106). He argues that the ascription of a special quality to an element in the action structure occurs because of its blending with some aspect of the supernatural agent. This is how the action elements acquire what can be called magical agency. This magical agency “is a fundamental prerequisite for representations of efficacy in ritual, when these are not only understood as purely symbolic expressions, but are believed to change or uphold a state of affairs either by ritual means alone or in combination with technological action” (Sørensen 2007b, p. 87). The Roman Catholic priest thus acquires his power by being blended with Jesus Christ himself (of course, only to an extent and having certain limits), the prayer by consisting of Jesus’ own words, and, as a result, the bread and wine by being considered as Jesus’ own body and blood. In these cases, conceptual blending occurs due to the fact that our cognition is equipped with a general image-scheme of a “container”: we intuitively distinguish between the external appearance of an object (perceived as a container) and its invisible inner content or essence (2007b, p. 100, cf. pp. 71–72). According to this explanation, the bread and wine can easily be perceived as containers of an inner essence, similarly to the way a national flag can be used to represent the inner essence of a nation. With reference to the medieval dogma of transubstantiation, Sørensen summarizes his view as follows:

In the blended space, representing the result of the ritual action, the material appearance of bread and wine are ascribed the essence of Christ, an entity classified as belonging to the sacred domain. Inside the ritual, the material substances of bread and wine present are explicitly identified as the flesh and blood of Christ, thereby deemphasising their own automatically ascribed essence [...]. The explicit reference to the material appearance of Christ (flesh and blood) directly provokes the representation of an underlying essence contained in this material. [...] As the bread and wine do not change their outer appearance despite the explicit identification, the ascription of a new essence (of Christ) to the bread and wine is the only way the participant can relate the two conceptual spaces. Thus, the identification can only refer to the essential qualities, as the perceptual appearance is unchanged. (Sørensen, 2007b, p. 99)

Sørensen shows that Roman Catholic eucharistic theology is substantially shaped not only by an elaborated theological discourse rooted in Aristotelian philosophical terminology, but also by human cognitive and conceptual capacities. As these capacities are almost the same for us as they were for medieval theologians or ancient Christians, it is legitimate to consider their impact in dealing with our Greek and Roman data as well.

Cognitive Theories of Ritual and the Lord's Supper

Before moving on to evaluate the contribution of Sørensen's theory specifically in relation to the study of the Pauline Lord's Supper, we need to briefly summarize the relevance of the theories of ritual introduced above in a more general respect. First, involving standardized behavioral practices of drinking libations, singing hymns and reading aloud, Greek and Roman banquets in general were heavily ritualized events (see, for instance, Murray, 1990). Second, early Christian meal practices were apparently no exception in this regard. However, it remains an open question how much ritualization was involved in the communal meals of Christians at particular times and in concrete locations. To proceed further in that respect, in what follows I offer a sketch of a cognitive ritual analysis of the "Lord's Supper," which is here taken as an ideal type of an institution of the communal meal in communities formerly addressed by Paul.

While their actual content and form remain uncertain, as we have seen in the preceding chapter, we can assume that the pronouncement of blessings over the bread and wine was a standardized part of these gatherings (as indicated by 1 Cor. 10:16). With the possible exception of communities that strictly followed the prayer prescripts of *Didache* 9–10, it is unlikely at this early stage that the prayers over the meal elements were fixed in any regard (McGowan, 2010, p. 188). Thus, as has been already emphasized in the previous chapter, it seems that rigidity, one of the key aspects of ritualization, was very limited in the earliest Christian meals.

Another obvious aspect of ritualized behavior is goal-demotion or non-functionality. Here again, Paul's hints about the situation in Corinth does not allow us to generalize. The meal event called the Lord's Supper appears to have been intended as a full, substantial meal, taking the form of the typical Greek or Roman banquet and conducted in the ordinary space of a Corinthian house. However, as demonstrated in the preceding chapter, various innovations occurred during subsequent centuries: while evening meals continued to play an important role in the life of some Christian communities for a relatively long time (cf. Tert. *Apol.* 39:16–19),³⁶ the periodic Sunday morning gatherings, including the blessing and consumption of meal elements called the eucharist, occupied an increasingly prominent place (cf. Just. *I Apol.* 66–67; Tert., *De cor.* 3.3; Cypr., *Ep.* 63.16). The space used for this purpose changed as well. For instance, meals conducted in a cemetery setting were especially popular among Christians. It is worth noting that cemetery architectural structures often served as a basis for later church buildings (see MacMullen, 2009).

Drawing on McCauley and Lawson's ritual competence theory, we can analyze the involvement of a supernatural agent somewhere in the action structure: is the culturally postulated superhuman agent connected primarily with the ritual agent, the patient or the action itself (by means of an instrument)? According to McCauley and Lawson, this should have decisive implications for the evaluation of ritual efficacy by the ritual participants.

As stressed above with reference to 1 Cor. 10:16, we can assume that in the course of the Lord's Supper in Corinth and elsewhere, a prayer (blessing) was pronounced over the meal elements. Paul uses the plural in his text (τὸ στήριον τὸ εὐλογίας ὃ εὐλογοῦμεν... and τὸ ἄρτον ὃν κλῶμεν...), which makes it uncertain who was actually pronouncing the blessing: did Paul have a particular ritual specialist in mind, or was this a privilege (for instance, of a wealthier member of the community)?³⁷ Although in 14:16 Paul maintains that to be understandable the blessing should not be pronounced when one is possessed by a spirit,³⁸ he

³⁶ That is, the so-called *agape*. See McGowan, 2004.

³⁷ On the basis of a comparison of the uses of the term αἰρέτις in 11.19 and among Greco-Roman associations, Richard Last (2013) has argued that the Corinthian meal gatherings could have involved some officers. Nevertheless, even if this was the case, this does not allow us to assume that these officers were viewed as ritual specialists.

³⁸ 1 Cor. 14:16: "Otherwise, if you give thanks with your spirit (εὐλογῆς νεματι), how can anyone in the position of an outsider (ὁ ναληρῶν τὸν τοῦ ιδιώτου) say 'Amen' to your thanksgiving (ἐρετὸ Ἀμήν ἐτῆ ἢ εὐχαριτίᾳ) when he does not know what you are saying (ἐεἰδὴ τί λέγεις οὐκ οἶδεν)?"

does not include this task among those mentioned (in 14:26) as communally distributed.³⁹ Since the blessing is not subject to dispute either here or anywhere else in Paul’s writings, it seems probable that the responsibility for it was not based upon a spiritual principle. Thus, the only religiously special structural element seems to be the blessing itself, which means that this ritual procedure falls under the rubric of so-called special instrument rituals. Technically speaking, the prayer is the instrument for achieving the purpose of the ritual.

The second crucial part of the ritual event is the consumption of the meal elements by the participants. Paul’s text indicates that, due to the preceding blessing, he considered the meal elements as somehow special. But since the acquisition of such “specialness,” according to the ritual competence theory, is best achieved with the special quality of the agent pronouncing the blessing, the type of ritual described by Paul could have faced serious problems over time. Therefore, what quite naturally followed in the later history of the early Christian meal practices was the introduction of special persons, such as bishops, to fulfill this role (see Chapter 4).

The Conceptualization of Ritual Efficacy and the Lord’s Supper

Above I referred to the controversy around the interpretation of the term “body” in the context of Paul’s account of the Lord’s Supper, which a majority of nowadays scholars understand ecclesialogically. Now we will turn back to that issue. Of the 120 occurrences of the Greek term *σῶμα* in the New Testament, 35 are in 1 Cor., which otherwise represents only 5% of the entire NT.⁴⁰ For instance, Paul writes of the body as opposite to spirit (1 Cor. 5:3), as a member of Christ (6:15), as subordinate to the will of man, and as the temple of the Holy Spirit (6:18–19). In 12:12–26, Paul maps the Church by means of a reference to the body of Christ. In this passage, a blend emerges between the body of Christ, on the one hand, and the community of baptized people, the Church, on the other. His point here is to stress that, ultimately, social diversity is not contrary to social unity.⁴¹

³⁹ 1 Cor. 14:26: “What then, brothers? When you come together (*ὁ ἑκάστης*), each one has a hymn (*ἕκαστος ψαλμὸν ἔχει*), a lesson (*διδαχὴν ἔχει*), a revelation (*ὁ ἀκάλυπτον ἔχει*), a tongue (*ἡ γλῶσσαν ἔχει*), or an interpretation (*ἡ ἐρμηνείαν ἔχει*). Let all things be done for building up.”

⁴⁰ More precisely, the letter consists of 6,829 Greek words, while the whole NT consists of 138,020 Greek words. See Just, 2005.

⁴¹ By diversity, he means either social stratification, as discussed in the previous chapter of the letter, or differences in gifts, services and kinds of work (12:4–6), or, most probably, both.

It could seem that Paul argues along similar lines already in 10:17: “Because there is one bread, we who are many are one body, for we all partake of the one bread.” But it does not make much sense to read this verse without the previous one in mind: the bread, which is a source of mapping in 10:17, is mapped in 10:16 in a particular way: “The cup of blessing (that we bless), is it not a participation in the blood of Christ? The bread that we break, is it not a participation in the body of Christ?” Here it appears that Paul is not only concerned by an ecclesiological issue (as verse 10:17 would seem to indicate, when viewed in isolation), but, too, to a certain extent, by a correct approach to the blessed cup and broken bread as such. It seems that what is being mapped in 10:16 is not a Christian community or Church or Christ’s blood and body, but the meal elements in the Lord’s Supper and the participation in them.

It might be helpful to express this formally in an idealized form by means of the standard visualization of conceptual blending. However, we have to be aware that at least in our case such visualization does not attempt to capture Paul’s metaphorical language in its complexity. Its primary aim is to help us to understand the cognitive processing behind the metaphorical language rather than to capture linguistic features of these metaphors *per se*.

Most typically, the conceptual blending theory works with the following scheme of how the mind forms conceptual blends: There are two *input spaces*, into which enter the two concepts which are mapped. Furthermore, there is a *generic space*, containing what the input concepts have in common. Finally, there is a *blended space*, into which the result of the mapping is projected with a fusion of other properties (see Fauconnier & Turner, 2002, ch. 3). I suggest that in the case of 10:16, the first main input is the concept of bread and the second main input is the concept of Jesus’s body (see Figure 5.1).⁴² What they have in common is that we participate in them, which represents a crucial property of the generic space. In the projected blend, other properties are also fused. This is a starting point of 10:17. Here the concept of Church (“we who are many”) (input space 1) is further blended with the concept of bread (input space 2). What they have in common is mainly the unity. However, as we see in the reference to the concept of body here (ἐν ᾧμα οἱ ὅλλοι ἐ μὲν), this second blend is also partially based on the previous one.

It is also in this context that the term κοινωνία is introduced. Without going into detail, it should be clear that the words of institution can be also interpreted along the same lines,

⁴² In what follows, conceptual blends referring to wine are not further discussed. It seems that in an ingestion context, wine follows a different metaphorical logic. Therefore, it can be suggestive that references to wine are often replaced by a reference to the cup (cf. 10.16, 11.25). This fact may have also contributed to an avoidance of wine in general in some communities (see McGowan, 1999a).

where the mapping of bread and cup is anchored in a mythic setting (11:23–25). Since Jesus' words are directed to the bread and the cup, the blending is basically the same as in 10:16. In light of these observations, I do not find so much support for the claim that the ecclesiological dimension predominates in Paul's text.

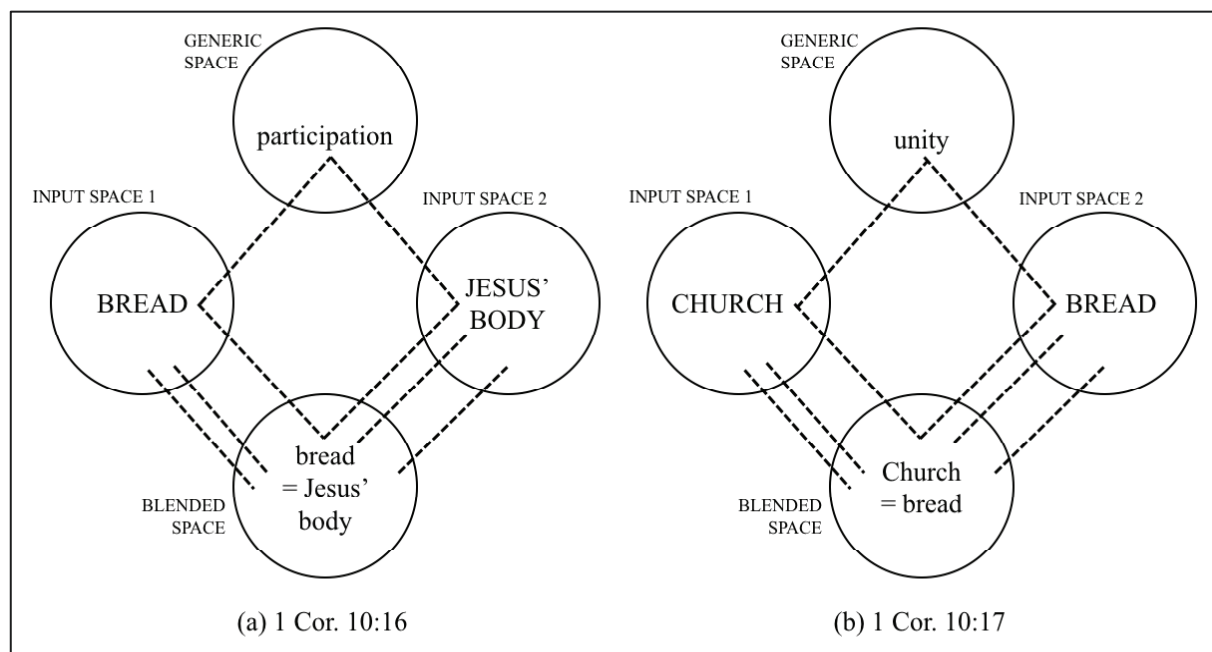


Figure 5.1: Conceptual blending in 1 Cor. 10:16 and 10:17

Throughout 1 Corinthians, Paul is repeatedly working with a metaphorical triad: (1) the Church mapped with reference to Christ's body (12:12–26); (2) the Church mapped with reference to bread (10:17); and, finally, (3) the bread mapped with reference to Christ's body (10:16, 11:23–25, 11:29). As we are concerned with issues relating to the meal, we have to ask what the role of the bread is in these usages: is it simply a matter of metaphorical language, or is there also something indicating that Paul ascribes a hidden essence (i.e., magical agency) to the bread? While it is possible to understand 10:16 as being purely metaphorical, we face problems if we attempt to interpret the warning verses 11:27 and especially 11:29, regarding “discerning the body,” in the same way.

Again, we do not attempt and cannot determine what exactly Paul had in mind here. Instead, it is more relevant for us that, with the aid of the cognitive scientific framework, we can reasonably speculate what his words caused in the minds of those who were confronted with them when laying on couches during communal meals and wondering how to conduct and understand these meals properly: How did Paul's metaphors resonated with ritual and magical

intuitions of his early followers when they were consuming their bread and wine? From that perspective, it is not a serious problem for us that the visualization on Figure 5.1 significantly reduces the complexity of Paul's language.

In the previous section, I tried to demonstrate that the meal practices of the type of the Lord's Supper were only weakly ritualized and that there was probably no ritual specialist specifically required to pronounce the blessings over the meal elements. From the cognitive perspective, this should have crucial consequences for how the ritual was perceived by the participants. Since the consumed bread and wine went through a very simple ritual procedure, it would not be intuitive for their consumers to ascribe them a strong supernatural power. As we have seen in the previous chapters, however, the ritualization of meals was on the rise and, at about the same time, the beliefs ascribing to the consumed meal elements a supernatural power were becoming more and more popular. Regrettably, we do not have enough evidence to untangle whether the gradually ritualized meals led to an emergence and spread of the supernatural beliefs associated with them or whether the increasing popularity of those beliefs led the participants to conduct their meals in a more ritualized fashion. One way or the other, it can still be argued that in 1 Cor. 10:16–17 and 11:17–34, Paul offered at least a very useful and cognitively attractive conceptual basis for these beliefs to be shaped.

With that complex process in hand, we can further ask which metaphorical counterpart was more appropriate to feed such an ascription: the bread understood as Jesus' body or as the Church? Above I noted that some scholars approach the passages in 1 Cor. from a social-functional perspective, which interprets both 10:16–17 and 11:17–34 primarily as ecclesiological discourse and tends to overlook the Christological dimension of the text. Paul's own aim, that of establishing the society-bread-body triad, partly supports this view. However, an analytical look at the "bread is Church" metaphor, evaluating it in respect to its potential reception, reveals at least one serious problem.

As has been demonstrated above, 10:17 should not be interpreted independently from 10:16 and the rest of the passage. The issue for the whole passage is an appropriate understanding of the bread and wine consumed during the Lord's Supper, as opposed to food offered to idols (τὰ εἰδωλὰ θύτου, 10:19), not the Church. Therefore, the reception of this passage should also be seen as shaped by the context of actual early Christian meals. In such a context, the bread is not an abstract entity, but rather an object that is materially present and intended to nourish those who consume it. From the cognitive standpoint, identifying the consumers themselves with actually consumed bread does not appear to be the most appealing idea. What would be the motivation for members of a community to consume something that

represents themselves? More importantly, what might motivate them to believe that by ingesting such bread they also could acquire something religiously special or even supernatural? From that perspective, identifying the bread with a central supernatural agent, or with some aspects of such an agent (i.e., Jesus' body), fits much better with the panhuman intuitions concerning ritual and its efficacy.⁴³

At this point, it should be evident that by using the insights from the cognitive science of religion and putting the Lord's Supper into the broader context of the later sources, we are able to gain a much clearer understanding of why the historical development took the course we know it did rather than an alternative one. Even if Paul himself would have been unhappy to discover that some Corinthians connected magical beliefs with the bread and wine consumed during the Lord's Supper, he definitely offered an attractive conceptualization supporting the emergence of such beliefs among his followers.

Conclusion

It appears that as far as the above-discussed interpreters of 1 Cor. 10:16–17 and 11:17–34 are interested in either Paul's own agenda or an original meaning of the text, they also follow Paul in understanding what the primary function of early Christian meals of that period was: to strengthen early Christian communal identity. The recent social-scientific approaches to early Christian meals accompanied by an adoption of comparative evidence can then be seen as a theoretically and empirically informed extrapolation of these kinds of approaches. In contrast to these approaches, in this chapter I deviated from this scholarly trend by focusing instead on the interplay of two things: on formal aspects of rituals as grasped in terms of cognitive theories of ritual and on general forces driving the reception of Paul's text. In this way, it has been demonstrated that any interpretation of 1 Cor. 10:16–17 and 11:17–34 that reads these merely as ecclesiological discourse, and ignores the potential of these passages to support the emergence of beliefs in the special quality of the meal elements, remains incomplete. In particular, I have argued that in a ritualized context, the consumed bread and

⁴³ Without a doubt, the ecclesiological interpretation of bread as referring to the Church was common in early Christian writings as well. Its earliest literary elaboration seems to be *Did.* 9–4 (cf. Serap. *Euch.* 1; *De Virg.* 12–13; *Const. ap.* 7.25; Cypr. *Ep.* 63.13). Some early Christian writers even promoted an understanding of the eucharistic bread primarily in this way; Augustine was known as the most influential proponent of this line of interpretation. However, see Chapter 3 for a detailed discussion of Augustine's eucharistic theology, showing that his emphasis lay elsewhere.

wine are more prone to be conceptualized in terms of Jesus' agency than in terms of the Church or society, although Paul himself and some of the later Church Fathers may have deemed otherwise. In the following chapter, we will evaluate these observations in respect to the cultural transmission of early Christian meals.

CHAPTER 6: MODELING THE CULTURAL TRANSMISSION OF RITUALS: AN AGENT-BASED MODEL CONTRASTING SOCIAL FUNCTION AND COGNITIVE ATTRACTION

Introduction

Over the last three chapters, I explored the hypothesis emphasizing the importance of ritual and magical intuitions in the cultural transmission of collective rituals. In respect to early Christian meals, this was in agreement with my prediction that as the meals were becoming more and more ritualized, especially during the first two centuries, they also started to be accompanied with beliefs ascribing a supernatural quality to the meal elements. I suggested that this was because the early Christians, who were organizing these meals or were participating in them, were continuously looking for a satisfying form of these meals while being unconsciously influenced by these intuitions. In that regard, they were looking for a balance between a ritual practice on the one hand and its intended outcome on the other. In terms of the theoretical framework elaborated in Chapter 1, more balanced practice-belief packages mean higher scoring in the variable of cognitive attraction.

Thus, for instance, a practice-belief package composed of (a) a blessing of eucharistic elements pronounced by a ritual specialist (e.g., bishop) using a rigid prayer formula (e.g., the eucharistic prayer of the *Trad. ap.*) conducted in the context of an otherwise non-functional meal setting (e.g., at daybreak in a cemetery), coupled with (b) a belief that the blessed elements are possessed of a supernatural power, conceptualized in terms of Jesus' agency (e.g., the bread is Jesus' body) and being sufficient to heal someone from serious disease (like blindness; see above), represents a very balanced—and, therefore, also a highly cognitively attractive—version of the ritual. In contrast, where the practice is either not ritualized enough to fit the promised ambitious supernatural outcome or where the intended outcome is too weak to motivate a complicated ritualized practice, the balance is not achieved and the cognitive attraction remains lower. If the early Christians of the first two centuries had not extensively ritualized their meals, the later generations would not have been able to associate with them such supernatural beliefs as we see in the sources from the third century onward, as the meals

and beliefs would become balanced differently (e.g., much less ritualized meals without supernatural promises).

The remaining puzzle to be solved is how exactly we should grasp these findings in respect to the issue of cultural transmission? How can it happen that some ritual forms (or practice-belief packages) become widespread in a population while others are discarded or abandoned? First, it is necessary to compare the possible role of the factor of cognitive attraction with the factor of social function. Therefore, in this chapter, we will move to a more general level while asking whether the success of a ritual variant can be primarily viewed as caused by how it fulfills and accomplishes specific social functions in a relatively better way (social functionalism) or because it is perceived as more cognitively attractive by an individual. In other words, we ask whether we should favor a hypothesis seeing the most important driving force in the cultural transmission of rituals in their social functions (e.g., how they contribute to promote in-group cooperation) or whether it is appropriate to maintain the hypothesis that focuses on the cognitive attraction of ritual actions.

Over the course of this thesis so far, I have paid attention especially to the factor of cognitive attraction, which I associated with various theories from the field of the cognitive science of religion. But as some references below indicate, it seems that over the last decade this field, too, has refocused on the topic of social functions. In that respect, cognitive research moved closer to a long tradition of scholarship in anthropology and the sociology of religion, in which the issue of the social function of ritual and religion in general has been at the center of interest at least since the publication of the seminal work of Émile Durkheim in 1912 (Durkheim, 1995). This tradition of scholarship also lies behind the social-functionalistic approaches to early Christian meals discussed in Chapter 5.

What I attempt to promote in this chapter is a better understanding of the cultural transmission of collective rituals by suggesting a way to operationalize the two hypotheses introduced above by associating them with our historical material. To achieve this goal, I adopt the method of multi-agent social simulations, that is, a computational tool aimed at simulating the interaction of human-like agents in the virtual environment of a computer. By assigning some rules of behavior to these human-like agents, we can study social processes like cultural transmission in an abstract way from a bottom-up perspective as instances of complex systems. I introduce here a model formerly developed with my colleagues Tomáš Hampejs and Zdeněk Pospíšil from the GEHIR project, which has been published in an independent article (Kaše, Hampejs, & Pospíšil, 2018). The main advantage of this kind of model is that the behavior of an agent-based simulation can be compared and contrasted with the real-world behavior of past

or present complex systems in a back-and-forth way, which is useful for an exploration of the potential implications of the hypotheses under scrutiny.

In any scientific enterprise involving multi-agent modeling, one of the biggest challenges is how to choose the right degree of abstraction to map and tackle the most relevant aspects of the system at hand: not to model the real-world system in its completeness, but to find the most important aspects of reality which are responsible for the main dynamics of the system of interest. As I will demonstrate in the following paragraphs, this task is valuable in and of itself because it compels a scholar to explicate in a direct and simple way—and to write down in the form of computer codes—a number of theoretical assumptions that would otherwise, and quite easily, remain implicit. Indeed, multi-agent simulations are typically used for theory development rather than for the empirical testing of theories.

Our model can be described as a cultural selection model of ritual. It is inspired by the historical analysis of early Christian ritual meal practices introduced in previous chapters. In that respect, I expected that the cultural context of the ancient Mediterranean of late Antiquity, where groups or even individuals could choose from a reservoir of culturally available religious practices, would be a promising environment to investigate these general processes of interest. Having such an environment in mind in our model, we built an artificial (hypothetical, but historically plausible) urban environment with a certain number of locations, where individuals (i.e., ancient Christians) repeatedly gather to conduct one from two types of ritual meals. As stable aspects of the simulation environment, in each location there is conducted only one type of meal. What is changing are the preferences of the agents, who repeatedly attend these meals while following certain decision-making rules influenced by what they memorize from the past and by several general parameters adjusted in the simulation interface.

Computational Modeling

Multi-agent social simulations—as used mainly by contemporary sociologists and economists (Bonabeau, 2002; Conte, Edmonds, Moss, & Sawyer, 2001; Macy & Willer, 2002; Squazzoni, 2010; Squazzoni, Jager, & Edmonds, 2013)—are only rarely designed to test empirical claims using real-world data about human societies.⁴⁴ More often, simulation techniques in social sciences are used primarily as a method of theory development (Gilbert &

⁴⁴ The term “multi-agent social simulation” is here used as synonymous with the more common and more general term “agent-based simulations.” I prefer the narrower label, as it makes clear that I am here dealing with models simulating social actors (i.e., human beings).

Troitzsch, 2005, p. 3). In this regard, the primary task of social simulations is to translate a cognitive/verbal theory (CVT) into a computational model (CM), which typically serves one of several general purposes, among which the explanation or prediction of a real-world phenomenon remains quite rare.⁴⁵ This is associated with the fact that, contrary to a majority of approaches in computational social science (Cioffi-Revilla, 2010; Conte et al., 2012) and the digital humanities (Gold, 2012), social simulations are not part of the Big Data movement, but primarily a theory-driven approach.

On a general level, multi-agent social simulations are a tool developed to study society as a complex system (Ball, 2013). Complex systems are composed by many interacting semiautonomous components, like individual human agents. As these agents (in the case of a social system) respond to each other's behavior, they often do so with some delay and with limited access to information concerning the system as a whole; therefore, a bundle of complicated feedback-loop cycles typically emerges. This dynamic makes the behavior of such systems difficult to explain and almost impossible to predict.⁴⁶

Computational simulations enable us to study real-world complex systems in an indirect way. Due to diverse computer programs, it is possible in an easy way to reproduce real-world complex phenomena with only a desired subset of features, which makes these systems more easily accessible for study and analysis. However, attention has to be paid to the fact that under scrutiny there is now an artificial society, not the real one, and great care should therefore be taken to avoid unwarranted assumptions about the correspondence between *in silico* and *in vivo* organizations.

Of course, the behavior of complex systems can also be fruitfully studied without using computational simulations techniques, especially by various forms of equation-based modeling

⁴⁵ The three more common purposes of simulations in the social sciences are *theory exploration* (i.e., checking/testing implications of a theory), *theory hypothesis generation* (that is, criteria set out to guide data gathering) and *theory-building* (Poile & Safayeni, 2016, §2.4–2.7).

⁴⁶ For instance, it can happen that nearly the entire population of citizens in a state can change their opinion overnight, for example, concerning a leading political figure. The obvious question is, how can such a change of heart occur so quickly? Can it be rationally explained, for instance, as resulting from a release of new information about this politician, which, in turn, causes a change in the citizens' perceptions? It might be. But causation is typically more complicated. Such processes often also involve a causal chain, in which a change in an individual's opinion is influenced by the number of those in his social network who already hold this new opinion reaching a certain threshold, which prompts him or her to shift from the previous viewpoint. As feedback, this change further influences others still holding the old opinion. An interesting question worth exploring, then, is how to identify the value of the threshold needed to produce an observed outcome.

(McElreath & Boyd, 2007). However, there are some domains where computational simulation techniques are of special value, such as on occasions when theorizing concerned with a complex social problem starts with specifications about interacting individuals involved in the system and not with a causal relationship regarding global aspects of the system as a whole. In other words, multi-agent social simulations are designed as a bottom-up enterprise, revealing how specifications of individual agents and rules for their interactions on the bottom (i.e., micro-level) go through a social structure (i.e., meso-level) and cause emergent behavior in the social system as a whole at the top (i.e., macro-level) (Macy & Flache, 2009).

From a philosophy of science perspective, social simulations of this type are related to the doctrine of methodological individualism—or, rather, structural individualism. Structural individualism, in the form advocated by proponents of analytical sociology, maintains that social facts should be explained as intended or unintended outcomes of individuals' actions (an aspect shared with methodological individualism). At the same time, it attributes substantial explanatory importance to social structures in which individuals are embedded (Hedström & Bearman, 2009, p. 4; Hedström & Ylikoski, 2010, pp. 59–60). Drawing on this perspective, its proponents further elaborate a mechanism-based approach to the explanation of social phenomena, which they see either on the level of individuals (Sperber, 2011) or on the level of social interactions (Macy & Flache, 2009). They view the method of agent-based modeling with ambitious expectations to bring these theoretically anchored insights into an ordinary academic enterprise (see esp. Hedström & Ylikoski, 2010, pp. 64–65).

So far, only a few studies have been published using the method of multi-agent social simulations for an elaboration of theories concerned by the dynamics of religions (for an overview, see Lane, 2013; Nielbo, Braxton, & Upal, 2012). Among the most remarkable exceptions, the book by William S. Bainbridge (2006) must be mentioned, since it forms a bridge between sociological theories of religion, artificial intelligence research and cognitive science. Bainbridge fulfills his task by introducing models previously developed by classics in the field of social simulations, which he originally elaborates on further and supplements by means of his own theorizing in respect to sociological theories of religion. Another notable publication is a study by Edmund Chattoe (2006), which aims to identify several pitfalls of functionalist explanations of churches' survival anchored in rational choice theory (Iannaccone, 1992). Along these lines is also a simulation study by Wesley Wildman and Richard Sosis (Wildman & Sosis, 2011), which was designed to test whether a mathematical model previously published by Joseph Henrich (2009) could be replicated in a multi-agent simulation

environment and to provide further implications for the theory of credibility-enhancing displays (CREDS).

These studies share the general rationale of multi-agent social simulations while emphasizing the value of theoretically oriented research. However, and this can be seen as one of their limitations, it is not easy to relate their results to concrete historical or anthropological realities. Furthermore, none of them have dealt specifically with the issue of the cultural transmission of competing ritual forms, which differ not only in their costliness but also in regard to various aspects of ritualization. Addressing these two issues (i.e., poor anthropological/historical contextualization and lacking a direct focus on ritual, ritualization and the cultural transmission of rituals) is what I perceive to be the main contribution of the model introduced in this chapter.

The Two Hypotheses

Above I suggested that the role of the factors considered to be responsible for the cultural transmission of rituals may be expressed in the form of two hypotheses.

H1: The factor of social function represents a leading force in the cultural transmission of rituals.

The first hypothesis explored here assumes that the primary factor with decisive implications for the cultural transmission of rituals is their capacity to fulfill certain social functions: participation in a collective ritual produces higher cohesion among the participants and therefore represents an important tool in maintaining in-group cooperation. Consequently, cultural transmission should favor those forms of rituals which are better suited to produce such outcomes. This hypothesis was formerly expressed by advocates of social functionalism and more recently elaborated by those who, in terms of evolutionary theory, sympathize with an adaptationist account of religion (Sosis & Ruffle, 2003; Henrich, 2009; Norenzayan, 2016; Watson-Jones & Legare, 2016).⁴⁷ As we have seen in Chapter 5, similar view is also popular among scholars in New Testament and early Christian studies who focus primarily on the social functions of early Christian meals.

⁴⁷ Adaptationist accounts of religion concentrate on the benefits of religion in terms of human evolution. Such theories suggest that evolution favored certain forms of religious beliefs and practices since they increased the chance of survival of groups or individuals who maintained them (Sanderson, 2008). This view is commonly contrasted with by-product accounts of religion, which argue to the contrary that religious beliefs and practices do not have an adaptive value in themselves (Boyer, 2003).

H2: The factor of cognitive attraction represents a leading force in the cultural transmission of rituals.

The second hypothesis primarily brings to the fore the fact that ritual forms vary in their cognitive attraction, showing that because of the balance between practice and belief some rituals are intuitively more attention-grabbing, more memorable, or perceived as more effective than others (Barrett & Lawson, 2001; Legare & Souza, 2012; Nielbo & Sørensen, 2011; Sørensen, Liénard, & Feeny, 2006). Consequently, the more attractive rituals should also be more successful in cultural transmission (McCauley & Lawson, 2002). An elaborated version of this hypothesis, and a prediction corresponding to it in respect to the historical data, has been advocated in the preceding chapters.

First of all, I have to emphasize that the two hypotheses explored here are probably true at the same time. They are not intended to be mutually exclusive. On the other hand, it appears that social function and cognitive attraction operate independently, as they are associated with mechanisms dwelling on different explanatory levels. Under certain conditions, these mechanisms can even work against each other to erode the overall effect of cultural transmission of the two factors. In other words, under certain conditions, an increase in cognitive attraction might cause a decrease in social function and vice versa.

One experimental study demonstrates this fact quite clearly when evaluating the possible effect of goal-demotion on cooperation. Goal-demotion is one of the most remarkable characteristics of ritualized behavior, indicating that such a behavior typically does not follow its ordinary goal (e.g., when ritualized, cleansing involves something more than merely making an object clean) (Liénard & Boyer, 2006). What is remarkable, experimental evidence has suggested that observation of a goal-demoted or non-functional behavior is more attention-grabbing than observation of an ordinary one (Nielbo & Sørensen, 2011). It remained to be settled, however, whether this aspect of rituals also promotes higher cooperation among ritual participants. To answer this question, Panagiotis Mitkidis and his collaborators (Mitkidis, Lienard, Nielbo, & Sørensen, 2014) conducted an experiment where the participants took part in a collective building task as members of one of two small groups and subsequently played a public goods game with the other members of the same group. In experimental economics, performance in a public goods game is a standard measurement of cooperative behavior.⁴⁸ The

⁴⁸ In the public goods game, each member from a group of participants secretly chooses how many tokens from his/her pot he/she puts into a pot shared with other group members. Subsequently, the collected amount of tokens is multiplied by a factor and equally distributed among all group members. Thus, as the game enables parasitism

two groups of participants were divided as follows: the first followed some provided instructions for a collective building task which did not include the final outcome of the task (i.e., the action's goal was demoted), while the second had the chance to look at a depiction of the intended outcome. The researchers found that the members of the second group were significantly more prone to cooperate with each other in the public goods game than the participants assigned to the goal-demoted condition (the first group). This is an intriguing finding, because it indicates that goal-demotion, one of the crucial aspects of ritualized behavior (which makes it more attention-grabbing, etc.), at the same time makes it less suitable to prompt prosocial outcomes.

Getting back to the first hypothesis, there is simultaneously a broad palette of features with the potential to make a ritual an effective tool in promoting prosociality. These are only freely associated with cognitive attraction. Among those aspects we can include, for instance, the involvement of motor-synchronized movements (Fischer, Callander, Reddish, & Bulbulia, 2013). It may appear that motor synchrony is highly related to goal-demotion. However, contrary to goal-demotion, which often pertains to individual behavior as well, motor synchrony is anchored in social interactions and, therefore, probably operates on the basis of different cognitive mechanisms being involved. Thus, synchronized movements in a ritual can broadly oscillate between being non-functional or goal-directed. For this reason, it seems misleading to expect that there can be a ritual form which is properly designed in both respects, that is to say, highly cognitively attractive because of goal-demotion and highly prosocial at the same time, representing a natural winner in any cultural transmission competition. At this stage of the research, therefore, I see these aspects as theoretically independent and analyze them as operating in relation to cultural transmission through different sets of mechanisms. While I can imagine proceeding further with simulation research in the future, in order to try to find an optimum combination of both, more empirical research is needed first.

Cultural Transmission of Rituals

Before delving deeper into the model, I have to properly define the cultural transmission of rituals in regards to the previously introduced hypotheses. Is a specific ritual successful because it creates successful groups or simply because it attracts more people, regardless of any

on the contributions made by others, not making contributions to the shared pot is a good indicator of a situational tendency toward prosocial behavior.

kind of societal advantage? The prosocial hypothesis is often interpreted as somehow related to the group's success, but further operationalization is vague (e.g., Norenzayan et al., 2016). The second hypothesis is more straightforward in that respect: cultural transmission can favor an attractive ritual regardless of its impact upon the group's success.

Although there is experimental evidence suggesting that some rituals are better in promoting prosociality than others, it remains quite puzzling how to mechanistically approach the implications of such features vis-à-vis a ritual's cultural transmission. So far, the most comprehensive account of these implications has been elaborated by advocates of the costly signaling theory of religion (see especially Sosis & Ruffle, 2003; Sosis & Bressler, 2007; Henrich, 2009; Wildman & Sosis, 2011). To put it briefly, advocates of this approach predict that groups which require or impose a certain amount of publicly displayed, and more or less costly, behaviors on their members will be successful in eliminating free-riders and will also be less vulnerable to in-group conflicts. As a result, such groups might expect higher longevity. Nevertheless, other than measuring the costliness of rituals as expressed in various forms of investment in the group's activity, this account does not say very much about ritual *per se*. Costliness may be used to interpret any kind of individual activity which, at least in principle, can be observed by other members of the group and which can be understood as costly by them (Martinez & Liénard, 2015). Furthermore, this account is not well suited to capture the internal dynamics of ritual practices. Branching out from rational choice theory, the form of ritual practice is here driven by the intentional decisions of individuals who evaluate to what extent they want to demonstrate their trustworthiness to others (see Chattoe, 2006 for this kind of criticism). Thus, it is understandable that scholars sympathizing with this theory prefer to approach religion on the group level, where this issue can conveniently remain unsettled. Instead of that, in this chapter I do not primarily examine religion on the level of enclosed social units, calling them either communities or churches, because I suspect that this approach can easily turn into a hidden form of essentialism, assuming that religious groups have something special that secular groups lack, even though it remains unclear what constitutes this religious quality. I instead understand religion from the bottom-up perspective as a web of continuously negotiated beliefs, forms of behavior and interacting individuals.

Historical setting

In order to explore in more detail the aforementioned hypotheses with regard to cultural transmission, while trying to adhere to a specific historiographical setting we can move to the historical context of the development of early Christian ritual meal practices discussed in the

previous chapters. This particular historical environment appears to be especially relevant in that respect, because here we have both inter-group competition on the one hand and sets of rituals that can cognitively attract individuals on the other. As we have seen in the preceding chapters, early Christian ritual meals practices probably differed a lot in how successful they were in maintaining group cohesion and in how attractive they were for individuals. These forms of ritual meals can be approached as market commodities, from which at least a sub-population of individual agents could choose from time to time.

It will be helpful to summarize and put further into context the evidence on early Christian meals that we discussed in the preceding chapters. Festive banqueting was a central social institution of ancient Mediterranean societies surrounding early Christianity (Smith & Taussig, 2012). Banquets were a central component of both occasional and periodical gatherings of broader families (Dunbabin, 2003), philosophical clubs (König, 2012), voluntary associations (Ascough, 2012) and religious cults (Gutsfeld, 2011). Such meals were modeled on a classical ideal that linked a proper dinner (*deipnon*) with a drinking party (*symposium*) that followed (Smith, 1992). During these, different kinds of activities took place, such as discussion, the collective singing of a hymn, dancing, or reading from a book. As codified by high-ranking classes, the ideal space for this was a room called a *triclinium* (Dunbabin, 1991), while the demanded posture for eating was a highly elaborate form of reclining (Roller, 2006).

Whether a party of friends or a specifically cultic gathering, every Greco-Roman meal was at least partly ritualized and involved a religious dimension (Smith, 1992, p. 653). Two characteristics are particularly important: the banquets were often organized in the name of a particular deity (see, for instance, the invitation “to the table of Sarapis” attested in some *papyri*; Horsley, 1981), and the shift from proper dinner to symposium was marked by a libation in the name of a deity (e.g., Diod. Sic. *Bib. hist.* 4.3). As has been expressed by a number of scholars, it would be strange if the early Christians did not use participation in common meals as an opportunity for their own gatherings (see McGowan, 2014, p. 20; Stowers, 2011, p. 128). In all probability, it was a natural choice, and we know that their Jewish counterparts, being part of the same culture, did the same (Marks & Taussig, 2014). Meals offered an ideal setting to meet friends with the same worldview, to share ideas with them and to conduct social experiments of various types (Taussig, 2009). As was also noted in the preceding chapters, in addition to ritual aspects, it was in the context of meals where the Christians of the first three centuries elaborated their social identity, boundaries and internal stratification, decided which books were appropriate to be read aloud during community gathering, and negotiated the “right” forms of beliefs and practices (see Smith, 2003; Taussig, 2009).

It is also obvious from the sources that until the fourth century at least, the form of Christian meal practices differed substantially from one community to another and from region to region. However, as these meals were becoming more and more ritualized and different from ordinary meals, certain patterns started to prevail. As I have demonstrated, some of these patterns can be analyzed in terms of recent cognitive and evolutionary theories of ritual, and, according to the two hypotheses elaborated above, some of their features should have a substantial impact upon their cultural transmission.

Despite the scarcity of evidence, we are aware of some historical constraints. The process of ritualization of early Christian meals, which is of particular interest here, lasted for more than 200 years. Starting with approximately 50 congregations around 100 CE, Christianity reached more than 500 locations before 300 CE with several million sympathizers (Fousek et al., 2018; Hopkins, 1998; Ehrman 2018). Because periodic meetings on Sunday were by far the most popular occasion for Christian meal gatherings since the very early phase (Llewelyn, 2001), it is worth considering that congregations with several generations of Christians altogether could have held more than 10,000 of communal meals during our period of interest. From a modeling perspective, 10,000 occurrences of a ritual practice transmitted from one occasion to the next is enough time both for the cooperative potential of a ritual and its cognitive attraction to reveal their power.

We should expect that in some urban places, dozens of interrelated Christian congregations resided next to each other for a substantial portion of time. For instance, Stark estimates that around 180 CE, there were 15,000 Christians in Rome, more than 8,000 in Alexandria, 3,300 in Antioch, and about 1,100 in Thessalonica (Stark, 2006, p. 71). Unfortunately, such figures entail a huge degree of speculation. It is impossible to determine the proportion of Christians who periodically took part in communal meal gatherings (for a skeptical opinion about this, see MacMullen, 2009). We can at least say with certainty that already during a quite early phase (i.e., before the end of the 2nd century) many more than one meeting place was needed in any of those cities. What was later translated into the language of doctrinal controversies could also mirror a struggle of congregations from one city aiming to attract adherents from neighboring congregations. Conducting a ritual meal that was either good at enhancing cooperation among the community members or appealing enough to attract new followers could have decisive implications for this competition. Below I draw on this historical scenario when introducing the artificial computational environment. However, to associate this scenario more closely with the two hypotheses, I first begin with a more simple conceptual model, which should help us with further operationalization.

For the simplicity of our model, we can imagine that at some point in time in half of the places where Christians from a city gathered to conduct their periodical communal meals, a ritual innovation was implemented which involved singing a specific hymn together accompanied by a set of synchronous bodily movements. Sources like the *Didache*, Justin Martyr, *1 Apol.* 67–69 or *Didascalia apostolorum* 2.57–58 document that this kind of innovation was quite common at some locations in our period. As a number of theorists from ritual studies have anticipated, such an innovation would enhance the experience of “collective effervescence” among the participants, to use a renowned term introduced by Émile Durkheim (1995, pp. 218–221). Upon sharing this experience, groups of Christians participating in this new version of the ritual would have become more cohesive, more cooperative and—in one word—more prosocial (Fischer, Callander, Reddish, & Bulbulia, 2013).

With the issue of the cultural transmission of rituals in mind, let me now operationalize the hypothesized prosocial effect of such rituals. I hypothesize that the “collectively effervescent” experience caused by the aforementioned innovation may have led to the emergence of stronger social ties among the participants. Because of these stronger ties, the agents would have preferred to meet each other again and to deepen their relationship. Translated into the context of our hypothetical scenario, the participants who repeatedly attended the more prosocial kind of ritual meals would have had stronger social ties with each other and, as a consequence, over time, they would have created strong clusters around locations where such rituals were conducted. Conversely, at the same time, locations characterized by the presence of a less successful ritual variant would have become less popular or even completely abandoned. This ratcheting and irreversible process, in turn, would contributed to further polarize choice by favoring the already well-established ritual.

What about the second hypothesis in this context? Imagine that the other half of the locations saw the adoption of a different ritual innovation. Proponents of this innovation here emphasized that the food elements consumed during the gatherings were endowed with a special quality or even had a healing power, but they added that in an order to produce this quality, a prayer over these food elements must take place at daybreak on a special day in the vicinity of a tomb containing the bones of a martyr. In one phrase, being now conducted out of a traditional dining room at an atypical time, the meals started to be conducted in a context that was not very appropriate for a banquet. As we have seen especially in Chapter 4, from the third century onwards, such kinds of innovations were becoming more and more popular and a number of early Christians started to favor forms of ritual meals together that included such goal-demoted features. As meals were diverging significantly from the traditional meal setting,

their performance was accompanied by a set of non-functional procedures, the eating itself was becoming primarily symbolic, and the meal elements were commonly perceived as imbued with supernatural power.

Here, too, we must evaluate the potential implications of such innovation for the cultural transmission of the given ritual form. As the second hypothesis implies, rituals with high cognitive attraction, expressing a balance between practice (i.e., revealing a certain degree of ritualization, such as the above-mentioned non-functional elements) and belief (being considered somehow effective in supernatural terms) should, as a consequence, attract more attendants. It seems reasonable to assume that someone who attended such a ritual would become motivated to take part in a ritual of the same type again and again. One who had attended such a ritual repeatedly in the recent past could also have been more prone to do so again under certain conditions. As a result, the places that adopted this innovation would have also received an advantage in the process of cultural transmission.

The Null-Model Description

As a next step, we have to translate this verbally expressed model into a computational one. For this purpose, my colleagues and I used the NetLogo computer program (Wilensky, 1999). NetLogo is an “all-inclusive” program developed specifically for agent-based modeling. When installed as a desktop application on a computer, it includes an editor for writing code, an interface for running, visualizing and parametrizing the model, and a tool for doing experiments with the model by letting it run repeatedly under changing parameter settings. In addition to that, the installation includes a library of simple models which can be easily modified, and thus the development of a new model only rarely starts from scratch.

Our model, formerly created in NetLogo version 5 and later on modified for using with version 6, can be easily used and further developed by anyone who has this version of NetLogo installed on his or her computer.⁴⁹

Our model is based on a population of 200 interacting agents who behave according to certain rules in order to imitate some aspects of behavior of ancient Christians. They are programmed to repeatedly visit places which in the model are called “ritual sites.” These ritual sites represent places where weekly periodical ritual meals take place in each step (or, in simulation community terminology, in each “tick”) of the simulation. In the model’s interface

⁴⁹ The model, including the NetLogo code and a technical description (the ODD protocol), is available online: <http://gehir.phil.muni.cz/casf/>.

(see Fig. 6.1 for black-white depiction of the environment with all details discussed here), these sites are displayed horizontally as a line of 10 numbers at the bottom of the black window. The numbers correspond to the overall number of agents present at the ritual site during a given tick; thus, this number is updated at every step of the simulation. The colors of these numbers indicate the type of ritual site (i.e., the practice conducted there): 5 yellow numbers on the left side are reserved for rituals producing a higher prosociality experience among their visitors (sites with socially more functional versions of the ritual, hence *SF sites*), while 5 red numbers on the right side represent locations with rituals revealing higher cognitive attraction for their visitors (sites with cognitively more attractive versions of the ritual, hence *CA sites*). At each tick of the simulation, a population of 200 agents settles on these ritual sites following certain rules described below. The colors of the agents in the environment (red, blue or white in the original) represent strategies on the basis of which they decide where to go in the given simulation step (i.e., their color changes every simulation step).

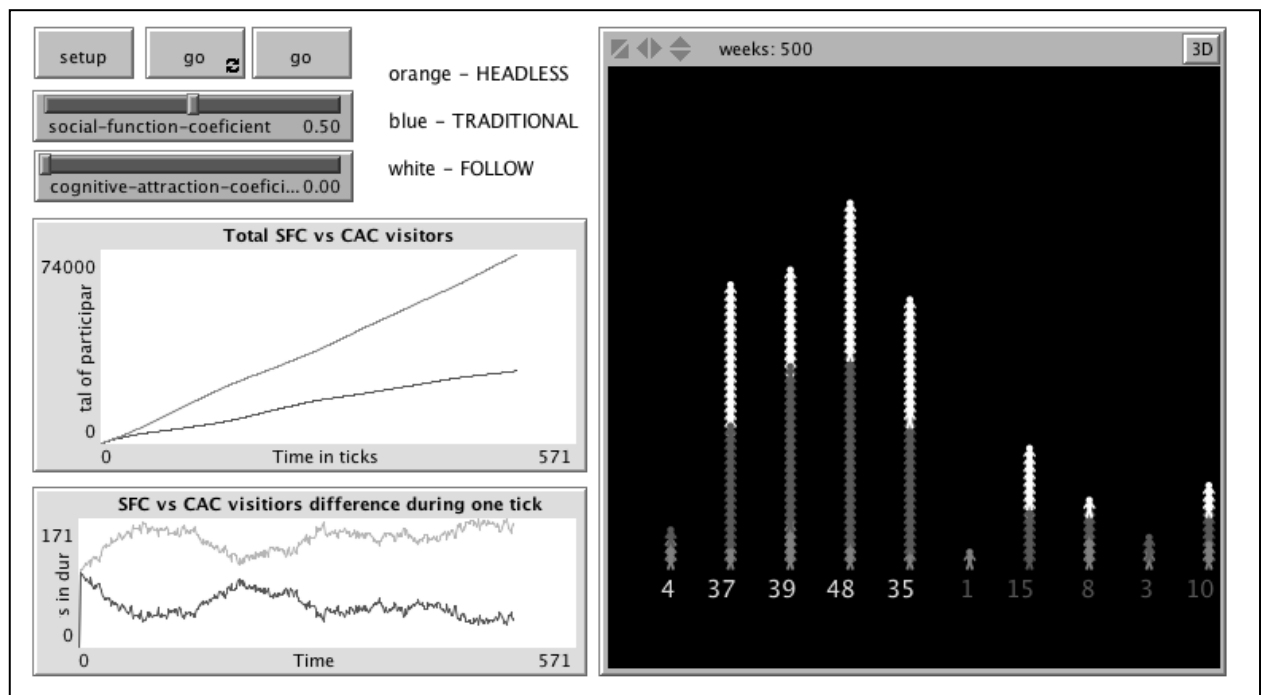


Figure 6.2: Simulation environment

At the beginning of each tick, each agent randomly picks a strategy according to which he⁵⁰ will decide which ritual site to visit. In one tenth of cases, the agent (their pictogram depicted in the color red in the original environment) goes to find a new spot completely randomly. This is a *random strategy* and its adoption by a small number of agents helps to maintain the overall dynamics of the model by preventing it from becoming too stable and, therefore, too resistant to change. Next to them, there is a substantial proportion (i.e., 40%) of agents (depicted by the color blue in the original environment) who simply decide to go where they were during the previous tick of the simulation. This is a *conservative strategy*, and it is crucial for creating sub-communities or clusters of agents tied to particular sites. However, of primary interest here is the remaining half of the agents, who decide individually where to go according to a strategy of acting in the present situation on the basis of what they hold in their memory. We call this an *adaptive strategy*, because these agents follow their experience, in contrast to the other two strategies where the agents decide without any regard for their past encounters.

These past encounters are held in the agent's memory. The agent here remembers what sites he visited during the last five ticks and whom he met there (see Fig. 6.2). As time goes on, he forgets everything older than five ticks back. In addition to this, the agent can hold in memory only a limited amount of information according to certain rules (these are described in detail in the ODD protocol, which can be found by following the link in the footnote above). As we increase the values of our two central parameters (explained below), the content of memory starts to matter more and more in the decision-making of agents "wondering" where to go from one occasion to the next. Thus, each of the agents behaving according to the *adaptive strategy* compare the individuals who are already settled on a ritual site with those he holds in his memory from previous ticks (all of the agents behaving according to the *random* and *conservative* strategies are already settled, so he can check them). After this check, he goes where he can meet the highest number of his friends, preferring especially those he met more often and more recently. This process continues until each agent is located on a certain ritual site. Finally, the memories of friends and visited ritual sites are updated and the process can start again with a new simulation step.

⁵⁰ There is no gender difference in our artificial agents. For the reasons of mere simplicity, I use the male pronoun henceforth.

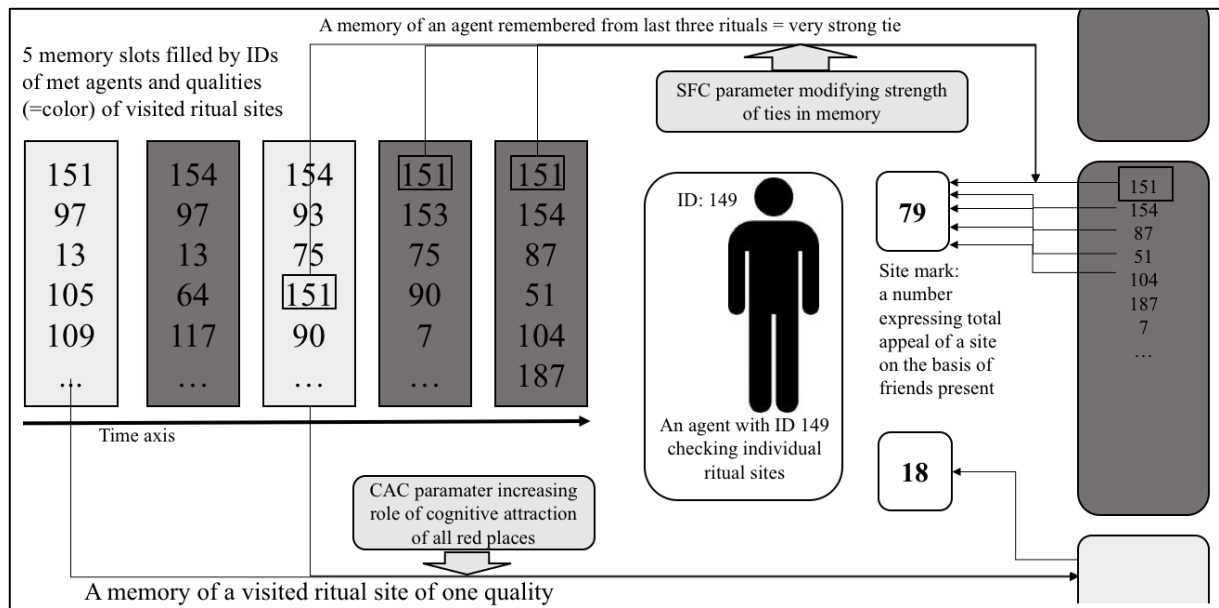


Figure 6.3: Agent's memory

Analytical Parameters

So far, the description covers what the model does before the parameters related to our hypotheses are applied. As such, it is a *null model* behaving quite stably and predictably, not preferring either of the two types of ritual sites and giving no advantage to either of our two hypotheses: there is just a continuously changing social network of ritual participants, who visit all ritual sites in approximately the same way. The change in the model never stops, because of the recurring adoption of the random strategy by a sub-selection of agents, which makes the system open to continuous change.

Now we can proceed to the two central factors with a crucial impact on the cultural selection process comprising the center of our attention. We operationalize these two factors as two analytical parameters: a *social-function-coefficient* (SFC) and a *cognitive-attraction-coefficient* (CAC). These modify how the agents experience their visits to the respective ritual sites: what they memorize and to what extent they are motivated. As a result of these parameters being activated, the agents begin to prefer one of the two types of ritual sites, either those on the left (the SF sites) or on the right (the CA sites). The parameters are part of the code, and their value can be accessed directly through the model interface. In our case they can be set by means of sliders located on the above-left site of the interface (see Figure 6.1).

The first parameter (SFC) has an impact on how much the deciding agent is affected by the social functions of the rituals he visited. The parameter value amplifies how much he wants

to meet those he had met before at the prosocial ritual sites, compared to those he met at the sites of the opposite kind. Checking the already accommodated agents at both types of sites, the agent is now especially drawn to those inhabited by “friends” which he previously met at the prosocial sites. With such a ratcheting effect, the prosocial function of rituals substantially modifies the dynamics of the system.

The alternative aspect of rituals anticipated to affect their cultural transmission is here operationalized by the second parameter (CAC). Each agent holds in his memory the last five sites he visited, as well as what kind of ritual was conducted there. When it happens that he has repeatedly visited any of the sites where the more cognitively attractive version of the ritual was conducted (the red ones in the interface), he proportionally prefers to attend this kind of site more and more over time than the sites of the other type. The social links remain as they are, but their role is counterbalanced by a different kind of factor. As some agents start to form memories of rituals at those sites and begin to prefer them in their decision-making, they also start to influence their friends to follow them. Thus, another ratcheting effect emerges, creating a direct attachment to the CA sites (i.e., not to the agents, as in the case of the SFC). Therefore, the model shows that rituals of the second type can become favored in cultural transmission.⁵¹

Model Results and Their Limitations

Now we can ask how the model behaves under all possible conditions of the parameter setting and how to interpret the behavior of the model in respect to the historical or

⁵¹ The process of how exactly an adaptively behaving agent decides where to go on the basis of the two parameters deserves a more technical description, which we make in the protocol referred to above. For our purposes here we can make a short summary of this procedure. The starting point is that each agent who adopts the *adaptive strategy* needs to decide the ritual site that best suits his preferences. For this purpose, he checks all the sites, marks them with points, and visits the site scoring highest. This marking and sorting is composed of two phases. In the first phase, the sites are marked on the basis of agent’s social ties. The marking of a site is the sum of social ties with certain values, which the deciding agent has with those agents already settled at this site (i.e., these behave according to the *random strategy* and *conservative strategy* in the current tick). In the second phase, the SFC parameter modifies the role of the ties that emerged or were reiterated at SF sites: if an encounter on the basis of which the tie originates has occurred at a SF site or has been later intensified at such site, the parameter causes the evaluated tie to be stronger. (The strength of a tie is modified by how far back in the past it occurred (an effect of forgetting) and multiplied by $1 - \text{the SFC value}$.) The CAC parameter affects the second phase, where the total markings of CA sites are amplified by the agent’s affinity with them. This affinity is computed by the agent’s previous visits to CA sites, which affects his current preference for those sites by multiplying their markings by $1 + \text{the CAC parameter value}$.

anthropological reality. In general, the model can produce three different outcomes: (1) the SF sites become significantly more visited over time; (2) the CA sites become significantly more visited over time; or (3) there is no significant difference in the proportion of visits to the two types of ritual sites over time.

We have to consider how to interpret these three possible outcomes in respect to the general question of the cultural transmission of rituals. The model draws on the assumption that in a real-world setting a higher preference of ritual sites associated with one type of ritual over a substantial period of time would lead either to the abandonment or replacement of ritual forms performed at the other sites, as—to use an analogy with market forces—a change in demand would create a change in supply. Although it is easy to imagine how to implement this subsequent process into the model, we decided not to do so, as this would make it more complicated to statistically analyze the model and to isolate the role of the two factors.

The outcomes are obviously dependent on the settings of the two parameters. The question is how sensitive they are to them. A preliminary observation of the model's behavior already clearly indicates that the model is much more sensitive in respect to the CAC parameter. Even a small increase in its values can produce significant changes in the behavior of the whole model. To dominate the outcome (i.e., too tight a majority of agents with the CA sites), its values can be much smaller. Despite quite a large degree of randomness in our model, advanced experimentation with it (the so-called sensitivity analysis) indicates that this behavior is quite stable.⁵²

This finding can be interpreted as especially supporting our second hypothesis (“*More cognitively attractive rituals are more successful in cultural transmission*”), indicating that the factor of cognitive attraction might be even of higher importance than the one of social function. However, we should be careful in interpreting our findings this way. First of all, our results do not represent an empirical support but only demonstrate a theoretical reliability for our approach, depending primarily on operationalization of the hypotheses in the model. Here we are aware of some limitations of our model, which give the CAC a clear advantage over the SFC parameter.

It should be noted that the SFC parameter works primary through long-term relations between agents. Under some conditions, this can work to the benefit of CA sites as well. It is because the SFC parameter, which establishes a preference for agents previously met at SF sites, works in a way to amplify the ties with them also when these agents are present at a CA

⁵² We publish the results of these experiments in the independent article mentioned above.

site in the current tick. At the same time, there is no way for the CAC parameter to work to the benefit of SF sites. Because a fluctuation of friends is common in the system (i.e., the system's constant openness to change due to the presence of agents behaving according to the *random strategy*) and the SFC sometimes even works to the benefit of CA sites, the CAC has a clear advantage over the SFC in the current implementation of the model. However, this fact was not obvious at a first look at the model, and this might be listed as an interesting finding.

On the other hand, when constructing our model we had to make explicit and write into the code many aspects of our theorizing, which commonly remain implicit in the scholarly literature dealing with the cultural transmission of rituals. At the same time, we attempted to follow two main rules: (1) to keep the model as simple as possible, and (2) not to model the system, but the problem. In that regard, it revealed to be very rewarding to ask how to operationalize the prosocial effect of rituals. To proceed further in this respect, we first had to find a simulation design enabling us to compare at the same time the effect of social function with the effect of cognitive attraction. While trying to reach this goal, we realized that arguing that one ritual is better at promoting prosociality than another actually says very little. We had to specify how cultural transmission can favor the first over the second and vice versa.

It is important to realize that the most popular experimental measurement to evaluate the effect of some stimulus (e.g., religious belief, practice or attitude) on prosociality is based on decisions of participants in economic games (like the public goods game described above). In that context, it is assumed that a higher donation to the shared budget in an economic game reflects a higher level of prosocial attitude toward those with whom one plays. Along those lines, it has been demonstrated experimentally that those who participate in highly emotionally arousing rituals subsequently donate more to charity than those who do not participate (Fischer & Xygalatas, 2014), as well as that people are more generous in this kind of activity when they find themselves in a religious location than when they are situated in a secular one (Xygalatas et al., 2016). However, it remains to be seen how to link this effect with the cultural transmission of a certain practice. To be sure, higher donations can mean being more prone to cooperation, but to get from a certain extent of cooperation to the historical success of a certain cultural trait assumes a much more complex causal chain, involving not only the immediate act of an individual but repetitious decisions made by a substantial number of people over a substantial period of time. We hope that our model makes a significant step by suggesting one possible way how this causal chain could look. It does this by adopting a bottom-up approach to model the process of interest as emerging from nothing more than simple interactions of individuals possessing certain cognitive features.

Another limitation of the model can be identified in the usage of concrete numbers and parameter values in the presented version of the simulation. Why a population of 200 agents and why 5 5 ritual sites? Modelers are often critiqued for setting their simulation in a way that supports the opinion they already have. This is not completely fair. The variables are set to certain values which are not too high in order to allow the simulation to be feasible on a personal computer while still enabling the adoption of the chosen statistical measures. Experimenters choosing a particular sample size do something very similar. However, the simulation here has one special advantage in this regard: its replication or modification is much simpler and cheaper than a behavioral study. For instance, it was quite inspiring for our theorizing to realize that, needing a large proportion of those behaving randomly or conservatively in each step to have the model to run in a meaningful way; it was very easy to implement this insight while still working on the prototype.

Finally, there is the question how to relate the findings gained through this simulation to the argument developed over the course of this thesis. In its chapters, I was analyzing the development of early Christian ritual meals as accompanied by an increasing popularity of magical beliefs concerning the meal elements, while collecting support for the hypothesis that (1) the cultural transmission of rituals is to a substantial extent driven by ritual and magical intuitions and that (2) this factor might even be of higher importance for the cultural transmission of rituals than how these rituals are designed to fulfill particular social functions. The purpose of this chapter was to demonstrate that this hypothesis is theoretically tenable, as we were able to demonstrate how the process of interest could work in an idealized environment sharing some features with the historical reality of early Christianity as we currently understand it. The results of the model thus indicate that the focus on the role of cognitive attraction in the cultural transmission of collective rituals traced in the preceding chapters might be the right research path to follow even on a more general level.

Conclusion

This chapter aimed at gaining a better theoretical understanding of the cultural transmission of rituals. It suggested a way how to operationalize the two hypotheses commonly associated with this process in the field of the cognitive science of religion: the one seeing the most important driving force in the cultural transmission of rituals in terms of their social function and the other focusing instead on their cognitive attraction in respect to the same process, which was explored in detail in the preceding chapters of the thesis. I introduced a multi-agent social simulation drawing on an original operationalization of the two hypotheses

and explored the behavior of this simulation across various settings. The simulation results indicate that cognitive attraction might quite easily come to be regarded as a leading driving force in the cultural transmission of collective rituals, which challenges certain recent scholarly trends ascribing it only a marginal role.

Interconnected with the historical analyses introduced in the previous chapters, the simulation holds a certain amount of external validity, even if it cannot be seen as an empirical test of the main hypotheses of interest here. Instead, the main contribution of both the simulation and the chapter lies in the theoretical advancement in the operationalization of the two hypotheses, their implementation via the simulation and in demonstrating the theoretical reliability of the approach developed in this thesis as a whole.

CONCLUSION

In the preceding chapters, I attempted to make a contribution to cognitive theories of ritual, ritual efficacy, magic and the cultural transmission of rituals while offering a new perspective on the history of early Christian meals. In respect to the historical material, I explored the hypothesis that (1) the long-term cultural dynamics of repetitive collective rituals is to a substantial extent driven by innate ritual and magical intuitions activated in those who participate in the rituals, and that, under certain conditions, (2) these forces might even be of higher importance for the cultural success of particular ritual forms than how these forms were designed to fulfill given social functions. I found this hypothesis to be historically reliable, but in the absence of available data I was not able to test it rigorously by means of standardized quantitative methods.

Without doubt, the inhabitants of the ancient Mediterranean world were superstitious or prone to magical thinking at least to a comparable extent with the modern Westerners who participated in the experiments discussed in the first and second chapters of this thesis. Magic and superstition can be found both in and outside of Christianity or any other religious tradition (see Talmont-Kaminski, 2013), and it is clear that for someone to become a Christian does not mean to become immune to magic or superstition. It is rather that the conceptual framework offered by religious traditions covers the magical and superstitious content by means of language, making this content much less obvious, since magic and superstition is viewed as something lying outside the boundaries of “proper religion.” This does not exclude the fact that magical and superstitious beliefs and practices maintain tremendous impact on the long-term dynamics of religious institutions, including frequently repeated collective rituals propagated by them.

The central hypothesis of this thesis was based upon the assumption that when humans participate in or observe a ritualized practice coupled with a set of beliefs, they activate what I have called ritual and magical intuitions, which drive them to judge how cognitively attractive the practice-belief package actually is. Change in a part of the ritualized practice or in a belief accompanying it can either increase or decrease the cognitive attraction of the whole, as it moves it either closer to or out of a balanced state.

The exploration of the implications of cognitive attraction for the cultural transmission of rituals moved us to the area of cognitive historiography. In an overview of different approaches to the relation between cognition and history, I sketched contours of cognitive

historiography as a hypothesis-driven type of research viewed as an integral part of cognitive science. In the spirit of this approach, a hypothesis of the main interest to a scholar is not formulated in respect to concrete historical material which is studied, but in respect to a general phenomenon concerning human thought and behavior, as studied by cognitive science and other life-science disciplines. The hypothesis turns to the historical reality when it is reformulated into a prediction. Of course, conducting this kind of research also contributes to our understanding of the studied historical material, but that is not its primary goal. Hence, emphasis is made in the introduction that this work attempts to contribute to the study of human thought and behavior in general at least to the same extent as to the study of early Christianity in particular. In respect to other cognitive science disciplines, the main advantage of cognitive historiography is that it has access to long-term cultural processes, which otherwise can be hardly approached by means of standard psychological or anthropological methods.

With the goal of an in-depth examination of the central cognitive historiographical hypothesis on the role of cognitive attraction in the cultural transmission of rituals, in Chapters 3, 4 and 5 I moved to historical material concerning the development of early Christian meals. I started with the end state of the process of my interest, focusing on widespread magical beliefs concerning eucharistic elements documented in the sources from both the third and fourth centuries. Following my theoretical framework, I suggested that these beliefs could emerge to reach a balanced state between beliefs and practices with highly ritualized forms of early Christian meals, which had developed previously, especially during the first two centuries. Here I challenged some generally accepted views in liturgical history. The process of the gradual ritualization of early Christian meals received an overview in Chapter 4.

As expressed in the context of the theoretical framework elaborated in Chapter 1, the interaction between practice and belief is to a substantial extent associated with the issue of the conceptualization of an individual ritual's elements: for a Christian to believe that the eucharistic bread is possessed of a supernatural power because of the transformative ritual procedure performed upon it is one thing; to be able to reliably conceptualize how this happened and why it works is another thing. It is evident that this conceptualization can also substantially contribute to the overall cognitive attraction of the practice-belief package. I focused on this factor in Chapter 5, where I analyzed the conceptualization of the bread and cup of wine discussed by Paul in 1 Corinthians in relation to what is appropriate during the Lord's Supper. This context gave me an opportunity to contrast my approach with other recent approaches to early Christian meals, focusing especially on their social functions.

A dialogue with recent scholarship continued in Chapter 6, but this mainly dealt with some recent theories in the cognitive science of religion that also focus on the social functions of rituals. To shed more light on the most widespread scholarly positions concerning the leading factors responsible for the cultural transmission of rituals, I formulated two idealized general hypotheses. *H1: The factor of social function represents a leading force in the cultural transmission of rituals; H2: the factor of cognitive attraction represents a leading force in the cultural transmission of rituals.* The latter clearly echoes the central hypothesis of this thesis, the historical reliability of which was demonstrated in the three preceding chapters. The remaining question was how much reliability it has on a theoretical level when compared with a hypothesis regarded as competing with it. For that purpose, I introduced an agent-based model, which enables exploration in detail of how the cultural transmission of rituals can work when affected by the two factors of interest at the same time. Although there are clear limitations of this method, it is sufficient for our purposes that it demonstrates that it is easily possible to imagine an environment in which the factor of cognitive attraction outcompetes the factor of social function. In that, I find formal theoretical (i.e., not empirical) support for the general hypothesis advocated throughout the thesis.

It would be tempting to say that the usage of computational modeling made the thesis as a whole a little more scientifically rigorous. Nevertheless, this would be misleading, as the usage of this method was primarily exploratory, not empirical. Nevertheless, on a more personal note, it is true that over the years during which I worked on this thesis I did not stop thinking about how to make the historical material of my interest a subject of more rigorous (i.e., quantitative) hypothesis testing. I introduced some possible paths for what this could look like in Chapter 2, which was concerned with cognitive historiography. As a way to conclude, let me explore in more detail three possible paths for this kind of research in respect to the subject followed in this thesis.

Working with the GEHIR project in Brno, I realized the potential of spatial modeling, using GIS data and network analysis, and I found a way how to use this approach for studying the spread of Christianity throughout the Roman Empire (Fousek et al., 2018). In particular cases, findings from this study might have certain implications for the study of early Christian meals as well (e.g., why there are shared liturgical patterns between places like Rome and Alexandria). However, to implement another quantitative method in this study would be rather disturbing, as it could quite easily turn attention from my theorizing to spatial aspects, which are rather secondary for the main argument I am trying to pursue here.

Another category of tools with some promise to enable the transformation of historical studies into a quantitative hypothesis-testing endeavor is the method of quantitative text analysis. Coined by the term “distant reading” (as opposed to “close reading” common in the humanities), quantitative methods dealing with digitalized texts are extensively used in literary studies, especially for the purpose of attractive visualization of texts (Cao & Cui, 2016; Jänicke, Franzini, Cheema, & Scheuermann, 2015; Moretti, 2013). However, as one recent study demonstrates, these methods can also be used to test cognitive scientific hypotheses on historical material (Slingerland, Nichols, Neilbo, & Logan, 2017). In a similar way, these methods could also be adopted for analyzing the corpora of early Christian texts in their original languages, as these texts have been almost completely digitalized and transformed into a machine-readable form. For instance, by using these tools we could analyze the relationship between such words as ‘bread,’ ‘body’ or ‘church’; this analysis could either support or falsify part of my argumentation.

Finally, many ideas considered here deserve to be tested by means of standard psychological experiments. In that respect, we could use the historical material as an inspiration and validation for empirical research conducted with living participants. When based on solid theoretical ground, this research strategy sounds to be the most easily tractable by both cognitive science and historical academic communities.

In the opening paragraph of this thesis, I advanced the statement that this study attempts to contribute to the theoretical discussion of such topics as ritual, magic and cultural transmission, at least to the same extent as to the study of early Christianity. I take my approach as one possible way how the study of history can enrich our understanding of human thought and behavior in general as studied by contemporary social, cognitive and evolutionary sciences. The main goal of this thesis has been fulfilled if a reader with a historical background recognizes the relevance of this generally oriented research and if a reader with a scientific background realizes that the study of early Christian history can substantially contribute to socio-cognitive scientific theorizing about ritual, ritual efficacy and cultural transmission of ritual. I would be even more satisfied if my research were to stimulate readers from both camps to engage in future cooperation on collaborative projects, a practice which is still too rare in the humanities. It is important to realize that living in the “digital age” makes such collaboration a much easier task than ever before.

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